

Similarities and Differences between U.S. and German Regulation of the Use of Derivatives and Leverage by Mutual Funds – What Can Regulators Learn from Each Other?

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Abstract

This study analyzes current regulation with respect to the use of derivatives and leverage by mutual funds in the U.S. and Germany. After presenting a detailed overview of U.S. and German regulations, this study thoroughly compares the level of flexibility funds have in both countries. I find that funds in the U.S. and Germany face limits on direct leverage (amount of bank borrowing) of up to 33% and 10% of their net assets, respectively. Funds can extend these limits indirectly by using derivatives beyond their net assets (e.g., by selling credit default swaps protection with a notional amount equal to their net assets). Additionally, issuer-oriented rules in the U.S. and Germany account for issuer risk differently: U.S. funds have greater discretion to undervalue derivative exposure compared to German funds. All analyses of this study reveal that under existing derivative and leverage regulation, funds in both countries are able to increase risk by using derivatives up to the point at which it is possible for them to default solely due to investments in derivatives. The results of this study are highly relevant for the public and regulators.

JEL-Classification: G15, G18

Key Words: Regulation, mutual funds, leverage, derivative, credit default swaps

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“Unfortunately, these risks were not made known to investors and stockbrokers failed to do even the most basic due diligence on the fund to learn of its high risk nature.”²

1 Introduction

How much flexibility does U.S. and German/EU regulation offer regarding the use of derivatives and leverage by publicly available funds? In recent years, highly regulated market participants, including mutual funds, were heavily exposed to risk via derivative use; unfortunately, regulators failed to intervene before trouble ensued. Financial institutions, such as the American Insurance Group (AIG), Bear Stearns, and the Oppenheimer Champion Income Fund, were in headlines around the world because of their near collapse due to investments in credit default swaps (CDS).³ These funds were not the exception: The majority of U.S. corporate bond funds increased their CDS positions and faced higher risks during the 2007-2009 financial crisis (Adam and Guettler (2014)).⁴ As indicated by these recent events, the use of CDS might have a tremendous impact on the performance and risk of mutual funds, which is why it is important for the public to understand the flexibility offered by current mutual fund regulation.⁵

This study analyzes the U.S. and Germany/EU regulation of the use of derivatives and leverage by mutual funds by presenting the relevant rules and highlighting the main similarities and differences between both countries, especially regarding the level of flexibility. In particular, this study discusses the application of existing regulation for CDS, which came into the limelight during the financial crisis of 2007-2009 (e.g., Stulz (2010), and Brice (2011)), and its (un)intended consequences.⁶ In addition, mutual funds in the EU follow the EU-wide regulation of the Undertakings in Collective Investment in Transferable Securities (UCITS) Directive 85/611/EEC, which, starting in 2001, broadened the flexibility of funds with regard to derivatives. Germany implemented this regulation in 2004 and is

² “Recovering Oppenheimer Champion Fund Losses” [<http://www.oppenheimerfundfraud.com/id3.html>, visited on 08.09.2012].

³ See “Recovering Oppenheimer Champion Fund Losses” [<http://www.oppenheimerfundfraud.com/id3.html>, visited on 08.09.2012], and Brice (2011). AIG had to be rescued by the U.S. government because a large amount of future obligations from sold CDS contracts on mortgage backed securities fell suddenly and surpassed the size of its assets (Brice (2011)).

⁴ Furthermore, Van Ofwegen, Verschoor, and Zwinkels (2012) find a relationship between credit derivative use and the insolvency risk of the 20 biggest European financial institutions.

⁵ Publications of the Securities and Exchange Commission (SEC), e.g., SEC Staff report (1994), SEC Letter to the GCotICI (2010), and the SEC Concept Release on Derivatives (2011), suggest the importance of the derivative strategies of mutual funds after times of crisis.

⁶ Managers of poorly and well-performing funds often face strong incentives to increase the riskiness of their funds as their salary and employment status depend on the development of the fund’s assets (e.g., Brown, Harlow, and Starks (1996)). It is well documented that managers succeeding in fund tournaments and fund family tournaments attract more inflows from investors and support from the fund family (e.g., Chevalier and Ellison (1997), Taylor (2003), Kempf and Ruenzi (2008), and Kempf, Ruenzi and Thiele (2009)).

considered representative of the broader EU-wide regulation in this study; however, it is important to note that the implementation date and/or details of regulation in other EU-countries may differ.

Funds might use derivatives for various reasons, e.g., to hedge interest rates, currency, or market risks; to substitute for a direct investment in the underlying position; or to increase returns. Regulators mainly limit a fund's exposure to loss from its various operations. Concerning derivatives, excessive leverage, illiquidity (particularly with regard to complex, over-the-counter (OTC) derivatives), and large counterparty risk are of high importance to regulators.⁷ In this study, I present how the U.S. and German/EU regulatory frameworks measure and protect against the possible negative effects of leverage and derivatives. In order to determine the amount of flexibility regulation allows funds to have when designing their leverage and derivative strategies, I analyze two types of restrictions: those of general nature and those that are more issuer oriented. In the U.S. and Germany, the only direct form of leverage available to funds is bank borrowing. However, funds can implicitly create an effect similar to explicit borrowing (direct leverage) by investing in derivatives or engaging in securities-lending transactions⁸ (indirect leverage). For example, a fund can create implicit leverage the size of the notional amount⁹ by selling protection via CDS (short position), which is comparable to borrowing the notional amount from a bank and investing it in the principal of a bond. Funds that build high positions in derivatives can create extensive leverage, which could lead to liquidity problems and ultimately default.

The U.S. and German/EU regulatory frameworks differ in how they regulate the use of derivatives and leverage by funds. In the U.S., the amount a fund borrows from the bank is restricted to up to 33% of their net assets, while in Germany funds can only borrow up to 10% of their net assets. In addition to limits on direct leverage, U.S. and German regulation limits derivative use. In the U.S., funds, in general, are required to segregate or earmark portfolio securities as collateral for all potential obligations to a third party created by securities-lending transactions and derivatives, such as futures, forwards, written options, short CDS. Theoretically, under U.S. regulation, a fund could sell protection via CDS with a notional amount equal to its net asset value and earmark all its portfolio securities as collateral.¹⁰ In Germany/the EU, funds, in general, can use derivatives to at most double the potential market risk of a fund (as measured by the Value-at-Risk (VaR) determined at the 99% confidence level). Similarly, a fund might sell CDS protection with a notional amount equal to (or even higher

⁷ See the SEC Concept Release on Derivatives (2011), p. 5, and the ICI Report on Derivatives (2008), p. 8-12.

⁸ E.g., if a fund enters into a repurchase agreement, it hands over some of its securities to the counterparty and receives cash instead, which is comparable to a collateralized loan.

⁹ In case of derivatives, the notional amount usually reflects the scale of a position with reference to some underlying asset, and shows the volume traded during a period of time (McDonald (2009)).

¹⁰ However, funds often segregate smaller amounts than originally required (only the daily mark to market liability) in the case of futures, forwards and interest rate swaps that require cash-settlement (SEC Concept Release on Derivatives (2011)).

than) its net assets as long as its VaR is less than twice as high as a VaR of a comparable fund without derivatives. Thus, by using derivatives, such as short CDS, a fund might create additional leverage and thereby circumvent the more stringent restrictions on direct leverage. However, if funds in worst case are required to pay the notional amount to the counterparty once a credit event specified under the CDS contract occurs, they might become illiquid due to extensive leverage. As a consequence of the flexibility provided by regulation, it is possible for funds in both countries to lose a large part of their value due to investments in derivatives, such as CDS, alone. This is exactly what happened to the Oppenheimer Champion Income Fund, which lost almost 80% of its value in 2008 primarily due to its CDS positions. This undesirable outcome suggests that it may be necessary to revise the regulation of derivatives in order to better protect mutual fund investors from potentially significant losses.

Other rules, i.e., issuer-oriented rules, guarantee a fund's independence from the credit risk of a few particular issuers by requiring it to diversify its portfolio. These rules limit a fund's exposure to losses from the default of the issuers of securities, including derivative reference issuers (issuer risk) and counterparties (counterparty risk). In the U.S. and Germany, issuer-oriented rules limit the investment of mutual funds into the securities of one particular issuer by a certain amount of a fund's net assets, e.g., up to 5%. However, the way the two countries account for exposure to the reference issuers of derivatives is different. Compared to Germany, U.S. funds are able to underestimate the exposure to particular issuers to a larger extent due to the application of the mark to market valuation.¹¹ This difference is especially pronounced for the reference-issuer exposure gained from selling CDS protection to synthesize bonds, which is considered at the market (fair) value of the CDS in the U.S. (by contrast, it is considered at the market value of underlying position of the CDS (or notional amount) in Germany/the EU, which is in line with bond valuation under issuer-oriented rules). Thus, by selling protection via CDS written on high-risk positions, funds can influence their asset allocations and risk profiles to a large extent under U.S. regulation. In order to guarantee a fund's independence from a few individual issuers and enhance investor protection, it is advisable that U.S. regulation accounts for the exposure to issuers more adequately than currently prescribed. Additional issuer-oriented rules guarantee that exposure to counterparty risk from derivative contracts (approximately measured by the positive market values of derivatives in both countries) does not exceed 5% of a fund's assets in the absence of exchange trading or central clearing.

¹¹ According to the mark to market valuation, exchange-traded derivatives are valued at their market values, while for OTC derivatives such as CDS fair values are determined by fund boards. That is why I use market (fair) value notation for CDS in the following.

Furthermore, new global rules on mandatory central clearing for the majority of derivative transactions will further decrease potential counterparty risk.¹²

Overall, U.S. fund regulation is less strict regarding the use of direct leverage than German/EU regulation. A final conclusion about indirect leverage is difficult to make because rules are structured differently under both regulatory regimes. Nevertheless, funds in both countries can obtain derivatives with a notional amount higher than their net assets. Thus, depending on the type of derivatives used, a fund could reach the point at which default is theoretically possible due to its investments in derivatives alone. The analysis further reveals that, under existing issuer-oriented rules, funds in the U.S. are able to alter their asset allocations and risk profiles to a large extent using derivatives without being detected by the public and regulators. Thus, regulators in both countries should rethink whether the current level of flexibility is desirable from the perspective of investors (especially unsophisticated ones) and consider implementing some of the modifications proposed in the following text.

The paper is structured as follows. Section 2 presents regulation in the U.S. and Germany/EU regarding mutual fund leverage and derivative holdings and section 3 highlights the similarities and differences between the countries. Finally, section 4 concludes.

2 U.S. and German/EU Regulation of the Use of Derivatives and Leverage by Mutual Funds

Derivatives are generally defined as financial instruments whose value derives from the value of other underlying variables (Hull (2012)). The market value of derivatives is often zero at contract initiation or close to zero soon afterwards and the notional amount describes the contract size (and sometimes expresses the highest possible loss realizable for the derivative). The main characteristic of derivatives is that they generate leverage in the form of a bet on an underlying position that is much higher than the initial investment (premium), which amplifies the volatility of fund returns. Consequently, depending on the type of derivative used, the fund might incur significant losses. On the other hand, derivatives facilitate risk sharing among investors, improve price discovery and make the allocation of capital more efficient.¹³ However, according to Stulz (2010), the perception of

¹² In 2009, the G-20 member states met in Pittsburgh, Pennsylvania due to the aftermath of the financial crisis 2007-2009. This led to the enactment of the Dodd-Frank-Act in 2010 in the U.S. and the European Market Infrastructure Regulation (EMIR) and Alternative Investment Fund Managers Directive (AIFMD) in Europe, which take effect in year 2013 and 2014, respectively. See "The Pittsburgh Summit: Key Accomplishments", September 25, 2009, [<http://www.state.gov/e/eb/ecosum/pittsburgh2009/resources/165061.htm>, visited on 05.12.2012].

¹³ The last sentences refer to McDonald (2009), p. 1-8, Stulz (2010), and the SEC Release 10666 (1979), p. 25129. Typically, if a fund holds a portfolio of bonds, it is exposed to the sum of the nominal values of those bonds. If the same fund invests its

derivatives as instruments that increase economic welfare declined after the financial crisis of 2007-2009. In the following, I present the current regulation for several types of derivatives in the U.S. and Germany and analyze issues that might arise due to the use of CDS.

2.1 Regulation of Investment Management Companies in the U.S.

Investment management companies offer pools of securities and assets to investors, which allow them to diversify their portfolios and to acquire professional asset management by an investment adviser. In the U.S., these investment vehicles are registered with the SEC and fall under the provisions of the Investment Company Act (“ICA”) passed by the U.S. Congress in 1940.¹⁴ In general, regulation in the ICA is complemented by SEC Releases and the SEC staff responses to written requests of interested parties with respect to the application of the federal securities laws to proposed transactions (the latter are called “no-action” letters). The securities of investment management companies are subject to the standardized disclosure and reporting requirements of the federal securities laws (e.g., the ICA, the Financial Accounting Standards Board (FASB) rules, the Securities Act of 1933, and the Securities Exchange Act of 1934) and their investment advisers are required to register with the SEC under the Advisers Act of 1940. Investment companies which register their securities offerings under the Securities Act of 1933 are generally allowed to offer and sell their securities to the broader public (including unsophisticated investors). Most of the investment companies also have a board of directors, a majority of whom are independent from the respective investment adviser and perform the role of independent “watchdogs” acting in the interest of investors.¹⁵

Although the ICA imposes only a few substantive limits on mutual fund investments, multiple operational restrictions exist to protect investors against conflicts of interest with the advisers (principal-agent problems). For instance, these important regulations specify the way to compute a

money primarily in derivatives that replicate securities, its exposure to bonds – measured by the sum of the notional amounts of the contracts – could be multiple times higher than if it were to invest in bonds directly (depending on the price of the derivatives compared to the price of regular bonds). This is comparable to, for example, directly borrowing money and investing it in the derivatives’ underlying positions.

¹⁴ Section (sec.) 5(a)(1) of the ICA defines an “open-end company” as “a management company which offers for sale or has outstanding any redeemable security of which it is the issuer.”

¹⁵ Also see the SEC Release 24083 (1999) regarding the responsibilities of the independent board members. Since 2007, only one independent member on the management board is required in Germany (§ 6a Investment Act/Investmentgesetz [2007]).

fund's net asset value (section 2(a)(41) of the ICA), limit leverage, as well as detail certain trading strategies.¹⁶ Regarding leverage and derivatives, the following rules of the ICA are relevant:

- Senior securities limitations regarding leverage according to section 18,
- Diversification provisions of sections 5(b)(1) and 13(a)(1) in conjunction with valuation based on sections 2(a)(36) and 2(a)(41),
- Portfolio concentration rules of sections 8(b)(1)(E) and 13(a)(3),
- Investing in securities-related issuers according to section 12(d)(3),
- Accounting and financial statement reporting (section 30(e)) and applicable disclosure provisions of section 8(b) and items 4(a), 4(b), 9(b), 9(c), and 16(b) of Form N-1A (registration statement),
- Other rules on the effect of derivative use on the liquidity of the fund's portfolio, ICA regulations relating to custody (section 17(f)), and fund names (section 35(d)).¹⁷

Table 1 summarizes the most important provisions.

Table 1: ICA provisions on derivative use and leverage by U.S. investment funds

Issue	Content of the regulation
1.) Senior Securities Limitations on Leverage (sec. 18(f) of the ICA)	
Controlling Leverage	Issuing any class of "senior security" is prohibited; however, mutual funds are allowed to borrow from banks if they maintain a 300%-asset coverage for those borrowings (thus, direct leverage is allowed up to 33.33% of a fund's net assets).
Controlling exposure to derivatives that create third party obligations (indebtedness), e.g., futures, forward contracts, written options (and securities-lending transactions, e.g., short sales)	Funds are allowed to engage in "senior security transactions" involving leverage like derivatives and securities-lending transactions only if they provide coverage (set aside assets or enter into offsetting positions) equal to at least the value of the potential obligations from these transactions.
Derivatives not involving indebtedness, such as purchased stock call options and leveraged inverse floating rate bonds	Funds using derivatives that do not impose any payment obligations above the initial investment (i.e., premium) do not face leverage restrictions as these derivatives do not fall under sec. 18(f) of the ICA.

¹⁶ Information contained in this paragraph refers to the SEC Staff report (2003), p. 5-7, the SEC Staff report (1994), p. 27, and the SEC Concept Release on Derivatives (2011), p. 23 fn. 68.

¹⁷ Information in this paragraph is based on the SEC Staff report (2003), p. 6-7.

Issue	Content of the regulation
2.) Diversification Requirements (sec. 5(b)(1) and 13(a)(1) of the ICA)	
Controlling exposure to different issuers through derivatives becomes relevant if funds are classified as diversified according to sec. 5(b)(1) of the ICA	A diversified fund is not allowed to invest more than 5% of its value in the securities of any one issuer (and in no more than 10% of the outstanding voting securities of this issuer) for 75% of its asset value.
3.) Portfolio Concentration Rule (sec. 8(b)(1)(E) and 13(a)(3) of the ICA)	
Controlling exposure to different industries through derivatives becomes relevant if funds state that they are either concentrated in a particular industry (or group of industries) according to 8(b)(1)(E) of the ICA, or starting to concentrate through the use of derivatives	Concentration within an industry is assumed to take place whenever a fund invests more than 25% of its assets in an industry. To prevent funds from substantial changes of their nature and policies without shareholder approval, they have to state on the registration statement whether they concentrate investments in a particular industry or a group of industries. All investments must be considered.
4.) Limitations on Investing in Securities-Related Issuers (sec. 12(d)(3) of the ICA)	
Controlling exposure to securities-related issuers of derivatives	Funds are generally not allowed to purchase any security issued by (or acquire an interest in the business of) a broker, dealer, underwriter, or investment adviser ("securities-related issuer"). According to rule 12d3-1 of the ICA, funds are exempt from this prohibition under specific conditions, which allow them to invest up to 5% of the fund's total assets in the securities issued by these issuers.

2.1.1 General Leverage Restrictions in the U.S.

Section 18(f) of the ICA is the most relevant piece of regulation regarding leverage. It prohibits mutual funds from issuing any class of "senior security" (leveraged capital structures) in order to avoid exploitation of senior bondholders and/or to limit the volatility of investments. Bonds, debentures, preferred stock, or bank loans are considered senior capital.¹⁸ However, mutual funds are allowed to borrow from banks provided they maintain a 300 percent asset coverage for these borrowings (i.e.,

¹⁸ The last two sentences refer to the SEC Staff report (1994), p. 26-28. According to sec. 18(g) ICA, a "senior security" can be "any bond, debenture, note, or similar obligation or instrument constituting a security and evidencing indebtedness, and any stock of a class having priority over any other class as to the distribution of assets or payments of dividends; and 'senior security representing indebtedness' means any senior security other than stock." Under the ICA, the definition of "security" includes any kind of "indebtedness". See the SEC Concept Release on Derivatives (2011), p. 19 footnote (fn.) 57.

direct leverage of up to 33.33% of a fund's net assets is allowed).¹⁹ The following additional rules apply to securities-lending and derivative transactions that cause potential obligations to a third party and, in principle, constitute prohibited "senior securities".

The use of derivatives increased in the 70s following the departure from the Bretton-Woods system (Hull (2012)). In 1979, the SEC stated in its Release 10666 that "leverage exists when an investor achieves the right to a return on a capital base that exceeds the investment which he has personally contributed to the entity or instrument achieving return."²⁰ In the same release, the SEC required funds to cover the potential obligations to a third party for a number of transactions, such as reverse repurchase agreements, forward contracts, and written put contracts, in order to prevent these transactions from being construed as the prohibited "senior securities". From then on, fund boards were required to detect the implicit leverage of other transactions that should be subject to this "coverage requirement".²¹

Later, the SEC distinguished between derivatives that create potential obligations to a third party (indebtedness) and derivatives that create the economic equivalent of leverage (not by imposing any payment obligations above the initial investment, but rather providing a gain potential above the initial investment). Funds using derivatives that create indebtedness, e.g., future contracts or written options, are required to cover the potential obligations to a third party. By contrast, funds using derivatives that create the economic equivalent of leverage, e.g., purchased options that grant the right to unlimited gains while restricting losses to the amount of the initial investment, do not fall under the coverage regime.²² Additionally, sec. 12(a) of the ICA regulates margin purchases and short sales, which can also increase leverage. This rule prohibits all margin purchases except for short-term credits necessary for clearing transactions and short sales. However, under sec. 18(f) of the ICA, the SEC agreed not to enforce the rule if a fund engaging in short selling provides sufficient coverage as required for derivatives.²³ In order to quantify the potential future obligations from long derivative positions, the SEC recommends using the purchase, or exercise price, of a contract (minus the margin

¹⁹ Some limited private and temporary borrowings (up to 60 days and max. 5% of a fund's value) are excluded from the definition. See sec. 18(g) ICA. "Asset coverage" of a senior security (representing the indebtedness of an issuer) refers to the ratio of the value of the total assets of the issuer minus all liabilities and indebtedness unrelated to senior securities to the aggregate amount of senior securities. See sec. 18(h) ICA.

²⁰ SEC Release 10666 (1979), p. 25129 fn. 5.

²¹ In its Release 7221 from 1972, the SEC mentioned, in the context of funds trading commodities, the requirement to cover for the first time. See **Appendix A** and the SEC Staff No-Action Letter to Dryfus (1987).

²² A purchase of a call creates economic leverage where one can only lose the premium paid to purchase the call, but theoretically gain an infinite amount, whereas the sale of a call creates leverage in the sense of indebtedness to a third party because one can lose much more than the premium paid by the buyer (i.e., the difference between exercise price and market value of the underlying position). See the SEC Staff report (1994), p. 24-26. Similar reasoning applies for the purchase and sale of CDS protection, which can be seen as options on a company's creditworthiness.

²³ See **Appendix A**, the SEC Staff No-Action Letter to Dryfus (1987), p. 2, and the SEC Staff No-Action Letter to RSIT (1995).

on deposit). For short positions (short selling), the SEC recommends using the market value of a security²⁴ and the full amount of the reference asset (i.e., the notional amount) underlying the contracts (e.g., derivatives).²⁵ **Appendix A** shows the amount originally required to cover derivatives, including forwards, futures, options, swaps, and short selling.

Under U.S. regulation, funds using CDS are required to distinguish between contracts for buying (long) and selling (short) protection. Similar to derivatives that create the economic equivalent of leverage, buying protection against the default of a bond via CDS does not require a fund to follow the coverage rules mentioned above since it does not impose payment obligations above the initial investment (CDS spread).²⁶ When a fund sells default protection using CDS, however, it effectively adds leverage (indebtedness) to its portfolio, because it is exposed to the notional amount of the swaps beyond its total net assets. Hence, according to the SEC, in order to be exempt from the prohibition of issuing “senior securities”, a fund must cover the amount of potential future obligations, which would equal the notional amount. However, taking the CDS notional amounts as indicators for coverage is a conservative approach as it ignores the offsetting potential of the recovery values of CDS references.

In order to comply with the coverage requirement, funds using derivatives that create indebtedness originally had to establish “segregated accounts” with a custodian (comparable to margin accounts) comprising sufficient levels of cash, U.S. government securities, or high-grade debt securities. Typically, securities segregated on the records of the custodian were unavailable for sale or other disposition (deemed frozen).²⁷ Since 1997, however, funds are no longer required to establish a

²⁴ Regarding short selling, a fund is required to maintain in “segregated accounts” an amount reaching the current market value of the security sold short (decreased by the amount of collateral deposited with the broker). See the SEC Staff No-Action Letter to RSIT (1995), p. 3. Alternatively, the fund does not need to segregate assets if it covers selling a security short by owning that security or holding a call option on that security with a strike price less than the selling price of the security. See the SEC Staff No-Action Letter to Dryfus (1987), p. 2.

²⁵ The last two sentences refer to the SEC Concept Release on Derivatives (2011), p. 26. The SEC stresses that there are at least two ways to value a derivative: via the current market value, which reflects the price at which the derivative could be expected to be liquidated; and the notional amount, which reflects the contract size valued at current price. See the SEC Concept Release on Derivatives (2011), p. 8-9.

²⁶ Buying CDS default protection is equivalent to shorting a bond that has an unknown future purchase price – unless a defined credit event occurs (e.g., the recovery value in case of default). If a defined credit event occurs, the fund gets the notional amount of the insured bond from the counterparty and provides the defaulted bond to the counterparty or, if a cash settlement was agreed upon, receives the net amount owed by the counterparty under the contract (minus any margin that must be posted under a standard ISDA contract). However, rules on short selling might be applicable if the two contract parties agree on a physical settlement, and require the fund to keep the underlying in its portfolio (as determining the amount of assets needed for coverage is difficult, because of the ex-ante unknown recovery value of the underlying). Please refer to the information contained in **Appendix A**.

²⁷ See the SEC Release 10666 (1979), p. 25131-25132 and the SEC Concept Release on Derivatives (2011), p. 22 fn. 65. In general, sec. 17(f) ICA requires investment companies to maintain their securities in the custody of a bank. Alternatively, they can maintain custody with a national securities exchange, securities depository, future commission merchants, commodity clearing organizations, and on their own books (self-custody). However, many derivatives by their nature require depositing collateral or margins to third parties to support the credit exposure to counterparty. See the CFRS Derivatives and Leverage Report (2010), p. 37-38.

segregated account with a custodian and can segregate assets themselves.²⁸ Beyond limiting a fund's potential leverage, segregated accounts also serve as a source of payments for future obligations. Since 1987, underlying instruments of the relevant derivatives or other offsetting instruments are deemed suitable for coverage.²⁹ In 1996, the SEC extended the range of assets that could be segregated to any liquid asset, including equity securities and non-investment grade debt securities, given they are liquid and valued daily.

Hence, potential third party obligations from derivatives and securities-lending transactions, as measured by the sum of the purchase/exercise price and notional amount of the derivative together with the current market value of securities "sold short", might theoretically reach 100% of a fund's total net asset value (TNA). However, the SEC observes that U.S. funds often use the market value of derivatives instead of the notional amount to measure the potential future obligations in case of swaps for "segregation". Some funds also disclose that they segregate the daily mark to market liability when using futures or forwards that require cash-settlement.³⁰ This is likely due to the fact that in 1989, in connection with the review of fund registration statements, the SEC non-publicly acquiesced the segregation of the net amount due on the contract for interest rate swaps.³¹ Later in 2005, the SEC (informally) indicated that a fund may segregate assets equal to the daily net amount owed under the contract for cash-settled futures and forwards (minus any margin that must be posted with a futures commission merchant). Today it is unclear whether funds segregate smaller amounts than originally required for all or only some types of derivatives and whether they do so in order to be more flexible in trading. Further research is needed on this issue. Nevertheless, U.S. funds might use this kind of "under segregation" to further increase their derivative holdings and eventually also indirect leverage without being detected by regulators. Overall, the SEC provides insufficient guidance for the application of the above derivative provisions.

A fund can hold all of its net assets as collateral in segregated accounts for selling CDS with a notional value equal to the net assets of a fund as long as no other type of derivatives is used. However, this approach ignores whether the fund uses these derivatives to implement non-speculative or speculative investment strategies. In consequence, a fund selling protection via CDS for non-speculative purposes (e.g., to synthesize bonds) is treated as one pursuing speculative investment

²⁸ The last two sentences refer to the SEC Staff No-Action Letter to MLAM (1996), the SEC Staff Letter from Lawrence A. Friend (1997), p.3, and the SEC Concept Release on Derivatives (2011), p. 25-26. In the following, coverage refers to either asset segregation or entering into offsetting positions by the fund.

²⁹ In the case of sold call options, this could be underlying securities (stocks) or offsetting positions, such as purchased call options. See **Appendix A** and the SEC Staff No-Action Letter to Dryfus (1987). Once transactions are covered, there is no reason to worry about undue leverage or speculation, which sec. 18 ICA protects against. See the SEC Release 10666 (1979), p. 25131-25132.

³⁰ The last two sentences refer to the SEC Concept Release on Derivatives (2011), p. 26.

³¹ For further information, please refer to **Appendix A**, and the CFRS Derivatives and Leverage Report (2010), p. 14-18.

strategies (e.g., to capitalize on credit market timing). Non-speculative investment strategies would create (unlevered) bond positions by selling protection via CDS while simultaneously increasing the notional value of Treasury securities to the level of the CDS notional value in order to avoid higher costs that would eventually be incurred by buying bonds in the market (Oehmke and Zawadowski (2013)). By contrast, speculative investment strategies would in fact add leverage to its portfolio by selling CDS because it would be exposed to the notional amount of the swaps beyond its total net assets invested elsewhere.

As an example, take two investment grade funds: one holding government bonds and the other only investing in asset-backed securities (ABS) (for simplicity, a residual cash position is ignored). If the first fund sells CDS on ABS with a notional amount equal to the fund's TNA, it effectively generates ABS equal in value to a fund's TNA. If the other fund, which is already invested in ABS, also sells CDS on ABS with a notional amount equal to the fund's TNA, it will be subject to investment exposure on the notional amount of the swaps in addition to its total net assets. Under U.S. regulation, both funds would have to "segregate" all of their net assets to be able to pay their potential obligations. However, in the face of unexpected shocks, which might substantially decrease the value of the ABS, the fund originally investing in ABS would eventually be unable to meet all its financial obligations from short CDS on ABS. This is possible because the value of the segregated ABS quickly decreases (and hence, so does the fund's current TNA) and some of the potential obligations out of the short CDS contracts, which are equal in value to the old level of TNA, become due. For the fund investing in government securities, the potential obligations out of the short CDS contracts, which are equal in value to the fund's TNA (before the decrease in value of ABS is observable), also become due. However, the value of its segregated government securities will remain mostly unaffected (or even positively affected due to the "flight to liquidity" effect) by this shock and remain sufficiently high to cover the obligations.

If the same funds were underestimating the amounts required for segregation by considering market values instead of notional amounts for CDS selling protection, it would allow them to increase indirect leverage even more and leave room for extensive risk-taking. Following the main idea of U.S. derivatives regulation, which restricts the level of potential obligations arising out of derivatives that incur an actual or contingent liability beyond their purchase price, it seems unreasonable to use market values that reflect expected values of future obligations at valuation date instead of using the

much higher notional amount for short CDS.³² As observed during the financial crisis, prices and expectations at reporting date can change very quickly.

Additionally, the U.S. general leverage restriction does not prevent funds from increasing the volatility of their returns by using derivatives that create the economic equivalent of leverage (derivatives that do not incur actual or contingent liability beyond the premium payment). This follows from the fact that the regulation focuses more on prohibiting funds from issuing senior securities rather than on limiting the volatility of investments.³³ As long as derivatives are used for hedging purposes, the volatility of returns decreases. For example, funds might buy CDS to protect themselves against a bond's default (or from counterparty's default). By contrast, if such derivatives are used for speculative purposes, the volatility of returns increases although the fund does not incur actual or contingent liability beyond the premium. For instance, funds can buy protection via CDS on a large scale on bonds that are neither included in their portfolio, nor correlated with securities contained in their portfolio, as a kind of bet on the creditworthiness of the respective companies, thereby exposing investors to heightened risks. This might not be in the best interest of investors since a fund that extensively uses this kind of long CDS, i.e., keeps CDS notional values of the size of a fund's assets (or higher), could lose a significant percentage of its portfolio value for premium payments if its bets are inaccurate.

Although disclosure rules will be discussed later in the text, the following quote from the Statement of Additional Information (SAI) of the PIMCO fund family exemplifies how funds handle their CDS exposure: *"The Fund's obligations under a credit default swap agreement will be accrued daily (offset against any amounts owing to the Fund). In connection with credit default swaps in which a Fund is the buyer or the seller, if the Fund covers its position through asset segregation, the Fund will segregate or ' earmark ' cash or liquid assets with a value at least equal to the Fund's exposure (any accrued but unpaid net amounts owed by the Fund to any counterparty), on a marked-to-market basis (when the Fund is the buyer), or the full notional amount of the swap (minus any amounts owed to the Fund) (when the Fund is the seller). Such segregation or ' earmarking ' seeks to ensure that the Fund has assets available to satisfy its obligations with respect to the transaction and could have the effect of limiting any potential leveraging of a Fund's portfolio."*³⁴

³² For purposes of calculating TNA under the ICA's valuation regulations, derivatives are generally valued using market value for exchange-traded derivatives and fair value for OTC derivatives; both reflect the value at which the derivative could be sold or transferred at the relevant time. This way the price at which fund shares are purchased/redeemed, is fair and does not result in dilution of investors' share holdings. See the SEC Release 26299 (2003), p. 74718.

³³ See the CFRS Derivatives and Leverage Report (2010), p. 14-18.

³⁴ SAI of the PIMCO fund family (2013), p 42.

This implies that the leverage restriction, as well as the obligation to hold enough liquid assets to meet payment obligations and redemption requests immediately,³⁵ guarantee that funds consider short CDS at notional amounts and long CDS at their negative market (fair) values.

Under the current leverage regulation, funds have a high amount of flexibility to use derivatives, which is exemplified by the possible use of CDS and indicative of potentially adverse consequences for investors. This flexibility stems from unspecific rules that have been partly relaxed over time, making the regulation nontransparent. However, various summary documents perceive the limitations on leverage differently. For example, the Investment Company Institute claims these limitations greatly minimize “the possibility that a fund’s liabilities will exceed the value of its assets.”³⁶ Regulators could significantly improve investor protection by revising the existing rules to measure derivatives exposure in a conservative way, i.e., by notional amounts and purchase/exercise prices (as originally suggested by the SEC), or by introducing clear and easy to enforce rules. If the goal is to protect unsophisticated investors from losing their entire investment due to a fund’s derivative holdings, the potential obligations from the speculative use of derivatives should be smaller than its TNA. For example, in Ireland, the maximum potential exposure from speculative use of derivatives is limited to 25% of TNA for non-UCITS investment companies offered to the public.³⁷

Another approach could restrict the exposure from all derivatives on a notional basis as well as limit the notional amounts of derivatives used for speculation to a reasonable level (it is up to the regulator to decide what constitutes a reasonable level).³⁸ On the one side, the restriction on the notional amount of all derivatives could be equal to, e.g., a fund’s TNA, and still allow funds to benefit from the use of derivatives for non-speculative purposes. On the other side, the notional amounts of derivatives used for speculation could be limited to 50% of a fund’s TNA (or to the even more conservative level of 25%, as in the case of Ireland). This type of combined approach, together with the obligation to hold a sufficient amount of liquid assets in order to meet payment obligations and redemption requests at any time, could replace the necessity for coverage. Although the above combined approach (or another simple approximate) might imperfectly measure derivative exposure, it can still be effective for the purposes of regulation. Alternatively, one could limit the volatility of fund returns by prescribing funds to use sophisticated methods of risk calculation, such as the Value-

³⁵ See the SEC Release 10666 (1979), p. 25128, the SEC Staff report (1994) and the SEC Staff report (2003).

³⁶ ICI Fact Book (2013), p. 221.

³⁷ See the SEC Concept Release on Derivatives (2011), p. 35.

³⁸ The exposure from selling CDS protection, together with the exposure generated by buying CDS protection on the notional basis, would be considered (if both are used for speculation) and limited to a reasonable level. Conceptually, this would be comparable to the commitment approach under German/EU regulation, which mainly focuses on the market values of the underlying positions of derivatives for funds that use (negligibly) complex derivatives or/and simple derivatives.

at-Risk (VaR) approach, which is currently applicable under German/EU regulation (CESR Guidelines (2010)). However, this might be difficult to implement and make comparisons across funds unreliable.

2.1.2 The Treatment of Derivatives under Issuer-Oriented Rules in the U.S.

As stated before, two kinds of exposure are important for the use of derivatives – exposure to the issuer of the underlying asset of the derivative (reference issuer risk) and to the issuer of the derivative itself (counterparty risk). These types of exposure are accounted for under various issuer-oriented rules in the U.S., which restrict investments in the securities of one particular issuer to a certain percentage of a fund's assets. The most important issuer-oriented rules are presented and discussed in the following subsections.

2.1.2.1 ICA Diversification and Portfolio Concentration Rules and Derivatives

According to section 5(b)(1) of the ICA, funds are obligated to “disclose in their registration statement whether they are classified as diversified or non-diversified.”³⁹ Funds are also required to state whether they concentrate investments in a particular industry or in a group of industries in the registration statement (8(b)(1)(E) of the ICA).⁴⁰

ICA Diversification Requirement and Derivatives

A fund classified as diversified is not allowed to invest more than 5% of its TNA in the securities of one particular issuer (and keep more than 10% of the outstanding voting securities of this issuer) for 75% of the value of its assets (5(b)(1) of the ICA). The diversification requirement guarantees a fund's independence from a few issuers and protects against controlling portfolio companies (SEC Concept Release on Derivatives (2011)). A fund that does not meet the above described requirements is a non-diversified fund (5(b)(2) of the ICA). However, according to subchapter M regulation of the Internal Revenue Code (IRC), even a non-diversified fund is required to diversify 50% of its assets in a similar way; otherwise it would be subject to taxation on its income or capital gains at the entity level (ICI Fact Book (2013)). A diversified fund can become a non-diversified fund only after obtaining the approval of shareholders (13(a)(1) of the ICA).

The relevant value of the total assets of a fund (2(a)(41) of the ICA) is determined at the end of its last proceeding fiscal quarter (including the value of the derivatives). Derivatives fall under the definition

³⁹ SEC Concept Release on Derivatives (2011), p. 49. This is the U.S. analog to the German 5% issuer limit.

⁴⁰ See the SEC Concept Release on Derivatives (2011), p. 63.

of securities as “notes” or “evidence of indebtedness” (2(a)(36) of the ICA).⁴¹ The value of portfolio securities depends on the existence of market quotes and the securities belonging to the portfolio at the end of its last preceding fiscal quarter (2(a)(41) of the ICA). If those two requirements are met, the value of the security is simply the market value at a particular point in time. If market quotes are unavailable, the value of the security or asset is equal to its fair value, as determined in good faith by the fund’s board of directors; for securities or assets purchased after the end of the fiscal quarter their costs are relevant (sec. 2(a)(41) of the ICA). However, it is unclear whether only the reference-issuer exposure of the derivatives or if both the reference and counterparty exposure should be considered for the purposes of the diversification rule.⁴² Further, the SEC observes that the application of the mark to market valuation for derivatives could allow a fund to “maintain an ongoing exposure to a single issuer or group of issuers in excess of 5% of the fund’s assets on a notional basis, while continuing to classify itself as diversified.”⁴³ Due to the fact that market values of derivatives do not reflect “the asset base on which future gains and losses will be based or otherwise represent the potential future exposure of the fund under the derivatives investment”⁴⁴, the SEC questions whether the application of the notional value, instead of the liquidation value, would better fulfill the diversification requirements.⁴⁵

Restricting the continuing exposure to a single issuer (or group of issuers) to below 5% of a fund’s assets on a notional basis would, in the case of short CDS, reduce a fund’s dependence on a few reference issuers more effectively than by limiting the market (fair) value of CDS. Moreover, the sources of leverage at the transaction level would be restricted. However, an even more precise approach for the diversification rule could require distinguishing between derivatives used for hedging and non-hedging purposes and limit those used for non-hedging purposes under the diversification rule, depending on the economic exposure created in combination with other securities. For example, hedging a portfolio against the default of a particular bond through buying default protection via CDS on the bond creates a risk-free security and thus, there is no need to account for the credit risk the fund faces with regard to this particular issuer (however, the

⁴¹ For an extensive discussion on this issue, please refer to the SEC Concept Release on Derivatives (2011), p. 49, fn. 134.

⁴² See the SEC Concept Release on Derivatives (2011), p. 53. Under this rule, the counterparty exposure of a fund is eventually accounted for at the positive market value of the derivative. If a fund buys default protection via CDS on specific underlying positions from a bank, the positive market (fair) values of long CDS (minus margins provided by the counterparty under the standard ISDA agreements) reflects the current claims of the fund.

⁴³ SEC Concept Release on Derivatives (2011), p. 52. For example, a diversified fund may invest three percent of its assets in securities of an issuer and, additionally, sell CDS protection on this particular issuer with a notional equal to six percent of TNA. This would create an exposure equal to another six percent of the fund’s assets as measured by notional and yield a combined exposure to the issuer of nine percent of the fund’s total assets. Although the total exposure to this particular issuer is over five percent of total assets on a notional basis, one would observe a mark to market value of CDS that is lower than one percent of a fund’s TNA. This scenario is based on the SEC Concept Release on Derivatives (2011), p. 52, 29.

⁴⁴ SEC Concept Release on Derivatives (2011), p. 52.

⁴⁵ See the SEC Concept Release on Derivatives (2011), p. 53.

counterparty exposure also increases in parallel). Likewise, if a fund buys or sells default protection via CDS to offset existing positions in short or long CDS, it is no longer dependent on the reference issuers and thus, there is no additional risk. By contrast, selling default protection via CDS on a corporate issuer creates a synthetic bond position that exposes the fund directly to the reference issuer – similar to a regular bond. Under the current diversification rule, relying on the small market (fair) values of the CDS selling protection undervalues this exposure and allows funds to change their asset allocation and risk profile. For instance, investment grade funds could sell protection on risky issuers via CDS to a large extent without being detected by regulator or investors. As current rules restrict investments in securities of specific issuers by considering regular stocks and bonds at market values, using the market values of the underlying positions of derivatives when appropriate would be an even more precise approach, which is applied by funds in Germany/the EU.⁴⁶

Portfolio Concentration Rule and Derivatives

Focusing on one particular industry may be necessary with respect to the investment objective, but it can increase the riskiness of the fund due to a lower level of diversification as compared to funds that are more diversified. Concentration within an industry is assumed to take place whenever a fund invests more than 25% of its assets in one industry.⁴⁷ Furthermore, funds are required to obtain shareholder approval before substantially changing their nature and policies (13(a)(3) of the ICA). Standard industry definitions are not provided in the U.S. and instead, funds determine the classifications for themselves (however, the economic characteristics of companies within each classification may not substantially differ).⁴⁸

The wording of the concentration requirement does not encompass derivative transactions.⁴⁹ However, entering into a derivative contract can generate exposure to many industries. For example, if a fund sells protection via CDS on a corporation from the durables industry (issuer of the reference asset), it gains exposure to the durables industry to the extent expressed in the market values of the CDS underlying positions (or alternatively in CDS notional amounts). By contrast, when buying CDS on durables from a bank (counterparty) the fund is exposed to the financial industry. Current claims of the fund would be reflected by positive market values of the CDS (while the highest potential claims would be reflected by the notional amount minus any collateral provided by the counterparty). Under

⁴⁶ The continuing exposure to a single issuer must also remain below 5% of TNA. **Appendix C** shows the commitment values for a selection of derivatives that need to be considered under German/EU issuer rules. Since the market (fair) value of the CDS reflects the difference between market value of the underlying position and the notional amount, the market value of the underlying position can be obtained by adding the market value of the CDS to the notional amount.

⁴⁷ See Instruction 4 Item 9 of Form N-1A, [<http://www.sec.gov/about/forms/formn-1a.pdf>, visited on 29.03.2012], and the SEC Release 23064 (1998), p. 13927, nn. 98-99.

⁴⁸ See the SEC Schwab Amicus Brief (2010), p. 2-3, 7-8.

⁴⁹ See the SEC Concept Release on Derivatives (2011), p. 65-66.

this rule, derivatives can be considered at their market values or notional amounts; market values potentially underestimate a fund's economic exposure to a particular industry through derivatives, whereas the notional amounts potentially overestimate the same exposure. Although it is important for funds to consider exposure to industries, they seem to do so only with regard to the reference issuers of derivatives (and not counterparties), and at market (and not notional) values⁵⁰ with similar consequences to what was described under the diversification rule.

In my view, the diversification and concentration rules serve similar purposes by guaranteeing diversification with regard to issuers (diversification rules) and industries (concentration rules). To prove compliance with these rules, one could focus on the reference-issuer exposure only. Existent rules such as the U.S. limit on investing in securities-related issuers and the global rules on mandatory central clearing are sufficient to capture the counterparty risk (these will be discussed in the next subsection).⁵¹ However, rules restricting investments in securities of specific issuers could better account for the reference-issuer exposure from derivatives by considering how derivatives are used in combination with other securities for non-hedging purposes, and relying on the market values of derivatives and the underlying positions of the derivatives (or alternatively, notional amounts). Otherwise, funds are able to circumvent the goal of both rules and change their asset allocations and risk profiles simply by selling CDS and relying on their small market (fair) values.

2.1.2.2 ICA Limitations on Investing in Securities-Related Issuers Through Derivatives

Section 12(d)(3) of the ICA is important if a fund's use of derivatives generates exposure to securities-related issuers. Funds are generally not allowed to purchase any securities issued by (or acquire interest in a business of) any person who is a broker, dealer, underwriter, or investment adviser ("securities-related issuer"). The restrictions on the exposure to securities-related issuers should prohibit funds from risky investments in illiquid businesses of such issuers and, moreover, from exploitation by fund sponsors, who could otherwise take advantage of the funds they sponsor. This restriction applies to all investment companies irrespective of their diversification status and is also important when a fund purchases OTC derivatives (but not if derivatives are exchange-traded or

⁵⁰ The last two sentences refer to the CFRS Derivatives and Leverage Report (2010), p. 29-30, and the SEC Concept Release on Derivatives (2011), p. 65-66.

⁵¹ The Committees of Federal Regulation of Securities advocate including the market value of the derivative reference assets in the calculation and ignoring the counterparty because of the disclosure-based nature of the diversification and concentration requirement under the ICA. See the CFRS Derivatives and Leverage Report (2010), p. 29-30.

otherwise centrally cleared). Whenever a derivative counterparty is a securities-related issuer, the transaction might be equivalent to the acquisition of securities issued by (or interest in) this issuer.⁵²

Under rule 12d3-1 of the ICA, if transactions are not considered to be acquisitions of interest in a securities-related issuer and the following conditions are met, funds can invest up to 5% of their total assets in the securities (valued at market values) of a securities-related issuer. Funds are allowed to purchase securities of (a) any securities-related issuer that earns 15% or less of its gross revenues from “securities-related activities”, provided that the fund does not control such person after acquisition. Alternatively, the securities-related issuer can (b) earn more than 15% of its gross revenues from “securities-related activities”, provided that after the acquisition of equity (debt) securities, the fund does not own more than 5% (10%) of the outstanding securities of that class of the issuer’s equity securities (of the outstanding principal amount of the issuer’s debt securities). Thus, the above exemption could be used by a fund that acquires OTC derivatives from a securities-related issuer. In this situation, a derivative would be categorized as a debt security and subject to the above mentioned 10% debt limitation of rule 12d3-1 of the ICA under which funds are allowed to account for derivatives at their market values or notional amounts. However, the SEC observes that funds often, but not always, use notional amounts to perform these calculations.⁵³

However, the exemption would still prohibit transactions if a derivative is not a security issued by the counterparty, but instead perceived as a fund’s acquisition of “interest in” a securities-related issuer. How to discriminate between the two cases remains unclear; an analysis of the fund’s exposure to a reference asset underlying the derivative might be required.⁵⁴ In general, whenever there is dependency between the fund and the securities-related issuer of the reference asset of a derivative, especially when the securities-related issuer is a credit support provider, funds have to consider this relationship under rule 12(d)(3) of the ICA.⁵⁵

⁵² The information contained in this paragraph derives from the SEC Release 13725 (1984), the CFRS Derivatives and Leverage Report (2010), p. 29-33 and the SEC Concept Release on Derivatives (2011), p. 59, 62-63.

⁵³ Refer to the SEC Concept Release on Derivatives (2011), p. 58-60, 62-63. Under rule 12d3-1 ICA, all securities, except equities, are recognized as debt securities. See the SEC Concept Release on Derivatives (2011), p. 58 fn. 156.

⁵⁴ The CDS reference-issuer exposure from securities-related issuers would eventually have been accounted for under the diversification and portfolio concentration rules at the market (fair) values of the CDS (for which I recommend using the market values of the underlying positions for CDS selling protection, or for simplicity, the notional amounts, to compare them to the limits).

⁵⁵ See the CFRS Derivatives and Leverage Report (2010), p. 31, and the SEC Concept Release on Derivatives (2011), p. 59-61. In any case, it is not permitted to acquire a general partnership interest in a securities-related issuer by a fund. See the SEC Concept Release on Derivatives (2011), p. 60.

All derivative counterparties are generally securities-related issuers.⁵⁶ If derivatives are securities issued by a securities-related issuer (and not prohibited acquisitions of interest in their businesses), they are considered at their market values under the 5%-limit under rule 12d3-1 of the ICA, as for other securities. For example, whenever a fund buys protection via multiple non-centrally cleared CDS contracts written by a securities-related issuer, their notional amount would be used to check whether the exemptions of rule 12d3-1 of the ICA are fulfilled (i.e., if a fund's notional of all debt securities including CDS lies below 10% of the outstanding principal amount of the securities-related issuer's debt securities). Alternatively, the market (fair) value of the CDS could be used to check compliance with this condition. If this condition is met, the fund might invest 5% of its assets in CDS (and other securities) of a particular securities-related issuer and, as required under current regulation, value these securities at their market values. When using the market values of derivatives to test whether debt securities of a particular issuer (including CDS) lie below 10%, the potential exposure to counterparties on a notional basis may, in fact, be multiple times higher than suggested by the market values.⁵⁷ This may create a problem if economic conditions change quickly (e.g., as happened during the financial crisis of 2007-2009). As long as all funds are required to make the first stage test for debt securities on a notional basis, comparing the market (fair) values of CDS to the 5% limit as currently prescribed by law would be sufficient to prevent funds from suffering significant losses due to counterparty failure.⁵⁸ In addition, the new rules implemented by the global community in the near future will further limit counterparty exposure from derivatives.

Recent Developments in U.S. Regulation on Restricting Counterparty Exposure

At the Pittsburgh G-20 Summit held in Pennsylvania on September 24-26, 2009, leaders agreed that all standardized OTC derivative contracts should be required to be cleared by a central counterparty (CCP) and reported to trade repositories by the end of 2012. As a consequence, most derivatives will be traded on swap execution facilities (SEFs) or exchanges and cleared by clearinghouses. The U.S. implemented the relevant regulatory framework for OTC derivatives in Title VII of the Dodd-Frank Act (2010), known as the Wall Street Transparency and Accountability Act of 2010. The Act authorizes the Commodity Futures Trading Commission (CFTC) to regulate "swaps", the SEC to regulate "security-based swaps", and both the CFTC and SEC to regulate the fill-in category of "mixed swaps" capturing

⁵⁶ See the CFRS Derivatives and Leverage Report (2010), p. 33. In the CFRS Derivatives and Leverage Report (2010), it is further recommended to disregard a fund's counterparty exposure from derivatives if payments due to the fund are fully protected by collateral (if the latter is bankruptcy-protected).

⁵⁷ See the SEC Concept Release on Derivatives (2011), p. 29, 53. Neither the SEC nor its staff has addressed that the exposure of the fund to its counterparty or the issuer of a reference name may be understated under the calculation if the current market value of the derivative is the appropriate measure (the potential future exposure of the fund to a securities-related issuer is also likely to be unaccounted for by the mark to market standard). See the SEC Concept Release on Derivatives (2011), p. 62.

⁵⁸ This would be in line with the findings of Helwege and Zhang (2013) – counterparty exposures are small, especially among banks that face diversification regulations (comparable to mutual funds), and do not typically cause a cascade of failures.

both swaps and security-based swaps. The term “swap” incorporates various derivatives: interest rate swaps, foreign exchange (FX) transactions (excluding forward FX)⁵⁹, commodity swaps, and certain credit swaps (excluding security-based swaps). A “security-based swap” is a swap referenced on a single security or loan, including CDS written on single issuers (e.g., a company or government), or a small group of securities/narrowly defined index (with fewer than 9 components). Since the implementation of the Dodd-Frank Act, both regulatory authorities have designed new rules for “cleared” swaps and higher capital requirements for “uncleared” swaps. External business conduct standards impose higher due diligence obligations on swap dealers/major swap participants and also require end-users to provide extended documentation.⁶⁰

Central clearing, which was introduced in the U.S. in March 2013, is expected to minimize the impact of a counterparty’s default as all contract counterparties are required to post collateral (initial and variation margin) with the CCPs, irrespective of their credit worthiness. In addition, CCPs themselves face stronger capital requirements. At the moment, central clearing is required with regard to interest rate swaps and specific CDS on indices. According to Duffie and Zhu (2011), it is unclear whether or not the expected benefits of the central clearing of derivatives, i.e., substantial reductions in counterparty risk, will be lost due to the fragmentation of clearing services. In addition, the amount of clearable CDS exposures is uncertain. The Basel Committee on Banking Supervision (BCBS) and International Organization of Securities Commissions (IOSCO) only recently developed consistent global standards on margin requirements for non-centrally cleared swaps as a basis for the rules of the G-20 member states. These standards are expected to reduce global contagion and spillover effects by guaranteeing that sufficient collateral is provided to offset losses caused by the default of a (derivative’s) counterparty. All financial firms and systemically important non-financial entities (“covered entities”) that use uncleared derivatives must exchange the initial margin (reflecting the potential future exposure) and variation margin (expressing current exposure) equivalent to the counterparty risks posed by such transactions. Additionally, only collateral that is high-quality and liquid can be provided to meet the above requirements (BCBS & IOSCO (2013)).⁶¹

⁵⁹ The Secretary of the Treasury excludes forward FX transactions involving the physical exchange of a single currency for another (e.g., EUR for USD) from regulation as “swaps”. See the SEC & CFTC Release 33-9338 (2012).

⁶⁰ For more information and sources, please refer to the “Dodd-Frank Act Rulemaking: Derivatives” [<http://www.sec.gov/spotlight/dodd-frank/derivatives.shtml>], visited on 15.12.2012], the SEC Release 34-68071 (2012), the CFTC Rule (17.02.2012), the CFTC Rule (11.09.2012), the SEC Roadmap (2012) and the final rule SEC & CFTC Release 33-9338 (2012). The Dodd-Frank Act (2010) prohibits the regulation of swaps under insurance laws.

⁶¹ Information in this paragraph refers to “Final Margin Framework for Uncleared Derivatives Released by Basel Committee and IOSCO Board Excludes Nonfinancial End-users from Requirements to Post Margin”, November 11, 2013, [<http://www.velaw.com/resources/FinalMarginFrameworkUnclearedDerivativesBaselCommitteeIOSCOBoard.aspx>], visited on 20.12.2013] and BCBS & IOSCO (2013).

2.1.2.3 Derivatives and Other Relevant Rules on a Fund's Liquidity, Name, and Disclosure

Illiquid assets

Funds are required to keep at least 85% of their assets in liquid securities. Therefore, they have to adequately account for derivatives when verifying that less than 15% of their net assets are invested in illiquid assets, i.e., securities that cannot be disposed of within seven days under usual business conditions at approximately the amount at which the fund values them. The SEC liquidity requirements of derivative instruments are dependent on relevant market conditions. Custom-made derivatives are more likely to be illiquid. The valuation of derivatives is typically carried out at market or fair values; at the same time, there is no clear distinction between different degrees of liquidity given by the law. Consequently, many funds incorporate clauses into their contracts that guarantee seven-day termination rights in their favor.⁶² Due to the short-term orientation, using the market values of derivatives can be justified under this rule.⁶³

Fund Name Regulation

Rule 35(d) of the ICA prohibits funds from using names that are deceptive and misleading. When determining their name, funds have to take into account investor perceptions and manage their assets accordingly. If a name suggests that the fund invests in a particular type of security, then at least 80% of the assets have to be invested in positions that comply with the name (fund name regulation in the following). Under this rule, securities including derivatives are considered at their market values. The CFRS Derivatives and Leverage Report (2010) recommends that the reference asset of a derivative is considered as an indicator of a fund's investment focus and the market values of derivatives used to prove compliance with rule 35d-1 of the ICA. Up to 20% of the assets can be held in other investments, i.e., cash or cash equivalents that are suitable to meet redemption requests. Descriptions like "short-term", "intermediate", and "long-term" are consistent with the fund name when the fund portfolio has a dollar-weighted average maturity of: at most 3 years (short-term); more than 3 years, but less than 10 years (intermediate); and more than 10 years (long-term). The 80% rule does not apply to fund names that contain the terms "growth" and "value" since they indicate the investment strategy as opposed to the type of investments.⁶⁴ Shareholders must be notified about every change in investment policy 60 days prior to the change.

⁶² For more details, see the SEC Staff report (1994), p. 20-22, the CFRS Derivatives and Leverage Report (2010), p. 36-37, and Form N-1A [<http://www.sec.gov/about/forms/formn-1a.pdf>, visited on 29.03.2012].

⁶³ However, as mentioned in the introduction, experience from the financial crisis 2007-2009 has shown that quickly increasing obligations from CDS holdings can cause the illiquidity of many market participants.

⁶⁴ For more detailed information about fund name regulation, please refer to 35(d) ICA in connection with the SEC Release 24828 (2001). Fulfilling the 80% requirement does not automatically mean that the name cannot be materially deceptive and misleading. See the SEC Release 24828 (2001).

Disclosure

U.S. funds are required to inform investors about their investment objectives and policies, investment strategies, and risks in statements of incorporation (Form N-1A), prospectuses, Statements of Additional Information (SAIs), and periodic reports. The statement of incorporation contains information about a fund's intention to use derivatives, while the prospectus comprises information about a fund's current use of derivatives and/or its intention to use derivatives. The SAI includes detailed descriptions of a fund's (or a fund family's) derivative handling, while the report comments describe the derivative strategies applied by a fund together with a brief overview of derivative handling. New FASB rules regarding financial information related to credit derivatives, which were introduced over the course of 2009, create uniformity in report comments, thereby allowing for better fund-to-fund comparisons. Funds are now required to state the nature and the terms of credit derivatives, give reasons for entering into those instruments, specify events that require the seller to perform under a contract, and describe the current status of the payment/performance risk with regard to the contract. Moreover, funds have to post information about the highest potential amount that the fund could be required to make as a contract seller, the market (or fair) value of the contract, and the nature of any recourse provisions/assets held either as collateral or by third parties. Before this change, information concerning derivatives was arranged arbitrarily throughout the financial statements of funds, causing large variation in the details provided about derivatives contracts.⁶⁵

2.2 Regulation of Mutual Funds in Germany

The following presents an overview of mutual fund regulation for UCITS-compliant funds ("UCITS funds")⁶⁶, with a focus on investment strategies, the use of derivatives and leverage, legal disclosure requirements, as well as recent changes.

2.2.1 The Transition from the Investment Act (2004) to the Capital Investment Law (2013)

In 2004, the German mutual fund industry was at a juncture marked by the legal endorsement of hedge funds and a major extension of the scope of possible investment strategies pursued by other types of mutual funds, including the wide use of derivative instruments as a part of the investment strategy. Moreover, new regulation introduced a simplified prospectus, specific expense disclosure

⁶⁵ Information contained in this paragraph refers to the ICA (1940), sec. 8(b), 30(e), the Securities Act (1993), the SEC Letter to the GCotICI (2010), the CFRS Derivatives and Leverage Report (2010), p. 41, and FASB ASC 815-10 (2009), Form N-SAR [<http://www.sec.gov/about/forms/formn-sar.pdf>, visited on 20.12.2013].

⁶⁶ However, the term "UCITS" commonly refers to "the investment company (if the UCITS is self-managed), and the management company, if the UCITS is not self-managed, or if the UCITS is set up in a contractual or unit trust form." CESR Guidelines (2010), p. 4.

rules, and tax-neutral mergers of mutual funds. The liberalization of the European mutual fund industry was driven by an adaptation of the overhauled European UCITS directive 85/611/EEC⁶⁷ on the national level by member states in the years following 2001.

In order to promote the competitiveness of Germany as an investment location, the Investment Modernization Act came into effect on January 1, 2004. The Act consisted of two parts, the supervisory Investment Act (“IA”)/Investmentgesetz (“InvG”) and the Investment Tax Act (“ITA”)/Investmentsteuergesetz (“InvStG”). It replaced the old regulation of the German Capital Investment Companies Act (“GCICA”)/Gesetz für Kapitalanlagegesellschaften (“KAGG”) from 1957 and the Foreign Investment Funds Act (“FIFA”)/Auslandinvestmentgesetz (“AIG”), which were the relevant regulations for German and foreign mutual funds in Germany, respectively. In the period from 2004 to mid-2011, the IA/InvG underwent two major reforms before it was finally replaced by the Capital Investment Law (CIL)/Kapitalanlagegesetzbuch (KAGB) in 2013. **Appendix B** provides an overview of the major changes and lists the statutory orders, which further specify the content of the legal changes, used for the discussion of financial derivatives regulation later in this document.

The Investment Amendment Act (“IAA”)/Investmentänderungsgesetz (“InvÄndG”) and the UCITS-IV-Implementation-Act (“UCITS-IV-IA”)/OGAW-IV-Umsetzungsgesetz (“OGAW-IV-UmsG”) came into effect on December 28, 2007 and July 1, 2011, respectively.⁶⁸ The focus of the IAA/InvÄndG was on the further deregulation, extension of scope (e.g., PPP or microfinance investment funds, among other investment funds), and the elimination of competitive disadvantages of open-end real estate funds. The UCITS-IV/OGAW-IV reform was concerned with the implementation of a powerful set of regulatory and supervisory conditions in order to let investment companies and single investors benefit equally from the advantages of a common market. The benefits of the reform included the simplification of cross-border notification procedures (and the introduction of a complete EU-Passport⁶⁹), mergers, and the pooling of financial assets through the introduction of master-feeder structures. Especially noteworthy was the EU-wide harmonization of regulations concerning the

⁶⁷ Council Directive 85/611/EEC of 20 December 1985 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS), OJ L 375, 31.12.1985, p. 3-18. The directive had undergone substantial changes from two amending directives by this time. The previous sentences in this paragraph refer to the BVI Jahresbericht 2004, S. 41, and Vollbrecht (2003), p. 1-2.

⁶⁸ The end of 2007 amendment was a full implementation of the consolidated UCITS Directive (85/611/EEC)/OGAW-Richtlinie (RL) (85/611/EWG) and the Implementing Directive (2007/16/EC)/Durchführungs-RL (2007/16/EG), whereas by the mid-2011 amendment the UCITS Directive (2009/65/EC)/OGAW-RL (2009/65/EG) was implemented.

⁶⁹ The extension of the EU-Passport to a complete EU-Passport for management companies enables managers to manage mutual funds located outside their country of residence in the EU.

supervision of management companies and investment funds and mutual recognition by the relevant member state authorities.⁷⁰

On the EU level, the European Market Infrastructure Regulation (“EMIR”) and the Alternative Investment Fund Managers Directive (“AIFMD”) entered into force on August 16, 2012 and July 21, 2011, respectively, but have not yet been fully implemented.⁷¹ The European Securities and Markets Authority (“ESMA”) is responsible for the consistent application of EU legislation in all member states and plays a special role in the implementation of the new OTC derivatives rules. ESMA is responsible for the authorization and monitoring of CCPs and trade repositories. Although central clearing specifically addresses counterparty credit risk, not all OTC derivative contracts are considered suitable for mandatory CCP clearing. For this reason, the rules further require ESMA to establish, maintain, and keep an updated public register on their website. The AIFMD fulfills the G-20 commitments with regard to a wide range of (alternative) investment funds that were not regulated at European level by the UCITS Directive 2009/65/EC. In addition to hedge and private equity funds, real estate funds and various types of institutional funds comprise alternative investment funds (“AIFs”). After implementing AIFMD into national law, all investment funds in the EU will be categorized either as UCITS or AIFs. In Germany, both the rules of the UCITS Directive 2009/65/EC and the AIFMD are combined into a new Capital Investment Law (CIL)/Kapitalanlagegesetzbuch (KAGB), which came into force on July 22, 2013. Since all important German statutory orders, legal interpretations, and tax rules still refer to the old IA/InvG, I will sometimes refer to the IA/InvG. **Appendix D** translates the relevant laws of the old IA/InvG to the new CIL/KAGB.

2.2.2 Restrictions on the General Investment, Leverage, and Issuer-Oriented Investments of Funds in Germany

The legal definitions of mutual fund types, which were valid until 2003, were subsumed under the umbrella term of investment fund (“Sondervermögen”), which continues to exist under prevalent regulation. According to § 2 IA/InvG [2004], investment funds are defined as open-end investment funds (“Publikums-Sondervermögen”) managed by an investment management company and must adhere to the standards of the UCITS directive (85/611/EEC). Although UCITS-compliant funds are the most common type of mutual fund, other special investment funds are also available to the public and subsumed under the term AIF since mid-2013.

⁷⁰ Regarding information contained in this paragraph, please refer to the Beschlussempfehlung und Bericht des Finanzausschusses, Deutscher Bundestag, Drucksache 16/6874 vom 25.10.2007, p. 230, UCITS-IV-Implementation-Act/OGAW-IV-Umsetzungsgesetz (Entwurf vom 31.12.2010), p. 1, 85, and the BVI Jahresbericht 2008, p. 50.

⁷¹ To the information contained in this paragraph, see EMIR (2012) and AIFMD (2011).

In order to use the legal mutual fund category for naming and marketing purposes, the law requires mutual funds to invest at least 51% of their assets in the respective category. Under this rule, securities including derivatives are considered at their market values. For example, a UCITS fund that is primarily (at least 51%) invested in fixed-rate securities should use the term “Bonds” or “Renten”, while a fund that is primarily invested in shares should use the term “Equity” or “Aktien”.⁷²

Since 2004, UCITS funds have been able to invest in an extended set of assets: securities (§ 193 CIL/KAGB), money market instruments (§ 194 CIL/KAGB), bank deposits (§ 195 CIL/KAGB), investment fund shares (§ 196 CIL/KAGB), derivatives (§ 197 CIL/KAGB), and other investment vehicles (§ 198 CIL/KAGB). The acquisition of precious metals or certificates for precious metals are explicitly prohibited by § 192 of the CIL/KAGB. Moreover, regulations concerning borrowing (§ 199 CIL/KAGB), securities borrowing and collateral (§ 200 CIL/KAGB), repurchase agreements (§ 203 CIL/KAGB), and short sales (§ 205 CIL/KAGB) have to be obeyed. Of high importance are also the legal issuer and investment limits (§§ 206–211 CIL/KAGB), which serve the purpose of reducing credit and market risk. A selection is summarized in **Table 2**.

Table 2: Issuer and investment limits for UCITS funds

§ CIL/KAGB	Issuer and Investment Limits (§§ 206–211 CIL/KAGB)	% of fund assets
§ 206 (1)	Securities and money market instruments of the same issuer (borrower)	5%/10% (40% cumulatively)
§ 206 (5)	Securities, money market instruments, bank deposits, and the offset amount for counterparty credit risk from OTC derivatives of the same institution	20% cumulatively
§ 206 (4)	Bank deposits with one bank	20%
§ 199	Short-term loans (< 1 year)	10%
§ 205	Prohibition of short sales has to be obeyed for all investment strategies. Since July 1, 2011, this is no longer applicable to derivatives.	
§ 210	The sum of the notional amounts of bonds and money market instruments of the same issuer must not exceed 10% of the total notional amounts of bonds and money market instruments issued by this issuer.	10% of the issuer's o/s total notional amounts

⁷² See the BaFin Directive on Fund Categories/BaFin-Richtlinie zur Festlegung von Fondskategorien (2004) & (2011).

§ CIL/KAGB	Issuer and Investment Limits (§§ 206–211 CIL/KAGB)	% of fund assets
§ 210	Voting/Non-voting shares of the same issuer may be purchased for a UCITS fund only insofar as their share in the total amount of voting/non-voting shares of the same issuer does not exceed 10%.	10% of an issuer's o/s voting or non-voting stock
§ 197	Derivatives can be included up to a two times increase of a fund's potential market risk. Associated issuer and counterparty risks have to be incorporated into the calculation of the above issuer limits.	Max. doubling of a fund's potential market risk

Paragraphs 206-211 of the CIL/KAGB establish a ceiling on the amount mutual funds are permitted to invest in certain asset types. In general, the law aims at distributing risk among a broad basis of issuers, securities, and real estate. According to § 206 (1) CIL/KAGB, no more than 5% of a fund's assets may be invested in securities and money market instruments of the same issuer. This issuer limit may be elevated to 10% of the asset value of a UCITS fund only if it is explicitly stated in the terms of the contract and the sum of such exceptions does not exceed 40% of the fund's value (5%/10%/40%-issuer rule). Furthermore, § 206 (4) CIL/KAGB imposes another volume restriction on investments in bank deposits with the same credit institute, which may not exceed 20% of the UCITS fund assets. Prior to 2004, sufficient deposit insurance did not warrant such a restriction. Since 2004, the offset amount for counterparty credit risk from OTC derivatives of the same institution is limited to no more than 5% of a fund's assets or 10% in the case of credit institutions.⁷³ A fund's cumulative investment in securities, money market instruments, bank deposits, together with the offset amount for counterparty credit risk of the same institution, are restricted to a maximum of 20% of a fund's assets (§ 206 (5) CIL/KAGB), with the aforementioned issuer-related ceilings remaining in place.

Short-term borrowing is limited to 10% of a fund's assets if provided for in the terms of the contract and if the credit terms are in line with common practices (§ 199 CIL/KAGB). Short-term loans have a maturity equal to or less than 1 year and serve either for investment purposes or to bridge a liquidity gap, but should not be part of long-term investment strategies.⁷⁴ Moreover, short sales are prohibited by § 205 CIL/KAGB (derivatives are excluded from this prohibition since mid-2011). The use of derivatives may, at most, double the potential market risk of a mutual fund (§ 197 CIL/KAGB) – i.e., the potential market risk from derivatives must be lower than a fund's TNA.⁷⁵ Investment companies

⁷³ See § 22 Derivative Order/DerivateV (2004), § 22 Derivative Order/DerivateV (2011) and the CESR Guidelines (2010).

⁷⁴ See the BaFin-Questions on Leverage/BaFin-Fragenkatalog zur Kreditaufnahme (2009).

⁷⁵ Under the commitment approach (simplified method), one can increase the potential market risk of a fund by using derivatives by 100% of its TNA, i.e., increase leverage to 200% (§ 51 (2) IA/InvG [2004]). See Vollbrecht (2003), p. 4.

have to assess their potential market risk by using an appropriate risk model and check it at least on a daily basis (CESR Guidelines (2010)). Since 2004, funds are allowed to use either the commitment approach (simplified method) or the VaR approach (advanced method) for risk measurement, depending on the types of derivatives used. The CESR Guidelines (2010) clarify that the commitment approach relates to the incremental exposure/leverage, whereas the VaR approach concentrates primarily on market risk.⁷⁶ Issuer and counterparty risks associated with derivatives have to be incorporated into the aforementioned calculations of issuer limits and will be discussed later in the text.

Since 2004, generally all kinds of derivative instruments may be purchased, including credit derivatives (§ 51 (1) IA/InvG [2004]). Furthermore, these derivatives may be used for hedging and investment purposes to a much larger extent than before.⁷⁷ Prior to 2004, a legal catalogue existed for all legally permitted derivatives. In Germany, securities funds („Wertpapier-Sondervermögen“) were initially (starting in 1990) allowed to use derivatives – particularly options and futures based on equity indices, interest rates, or currencies. Funds were allowed to sell futures contracts for hedging purposes (if they keep the referenced underlying positions in their portfolios or if they, in the case of futures on currencies, face equal underlying risks in their portfolio). Until 1998, the exercise prices of purchased or sold options and the value of futures contracts could each reach up to 20% of a fund’s TNA (however, funds could purchase interest rate futures contracts for non-hedging purposes if they complied with the 20% of TNA limit on the value of all futures contracts). From 1998 to 2004, funds in Germany could use options, futures/forwards, options on futures (based on securities, accepted indices, interest rates or currencies) and swaps (total return swaps, currency and interest rate swaps). Funds that held swaps were required to hold the respective underlying positions in their portfolios, which was otherwise only required if funds were selling derivatives or their underlying positions (for any purposes). Funds buying or selling currency futures (or options on them) could do so only if they hedged the risks existing in their portfolios. Until 2004, the market value of a fund’s securities including futures contracts (of contracts selling the underlying for non-hedging purposes and those buying the underlying) could be, at most, equal to their net assets.

Under the new regulation, restrictions are placed on permissible underlying assets; hence, derivatives might be based on the following underlying positions: securities, some investment fund shares,

⁷⁶ For details regarding the application of the simplified and advanced method provided also later in the text, please refer to the following BaFin Explanation (2009) on the Derivative Order (2004)/BaFin-Erläuterung (2009) zu den §§ 6 – 17 DerivateV (2004) and BaFin Explanation (2011) on the Derivative Order (2011)/BaFin-Erläuterung (2011) zu den §§ 6 – 17c DerivateV (2011), respectively.

⁷⁷ 2004 was the first year where pure derivative funds could be launched in Germany. See the BVI Jahresbericht 2004, p. 43-44. To the following sentences of this paragraph compare §§ 8d-8f GCICA/KAGG [1990] and §§ 8d-8f GCICA/KAGG [1998].

money market instruments, accredited financial indexes, interest and exchange rates (or currencies). The use of derivatives is regulated under § 197 CIL/KAGB in conjunction with the Derivative Order (2004)/DerivateV (2004) and Derivative Order (2011)/DerivateV (2011), with the latter referring to the old § 51 IA/InvG. Since 2004, the use of derivatives must not lead to an alteration of a fund's purpose, as stated in the prospectus and the terms of contract. Moreover, it must be attuned to the profile of a typical fund investor and obey the above investment regulations and contract terms.⁷⁸

2.2.2.1 Derivative Use under the General Restriction of the Commitment Approach

The commitment approach is suited for funds that use simple derivatives, but it might also be used if the amount of complex derivatives in their portfolios is negligible (which is assumed whenever the highest potential loss arising out of these derivatives lies below 1% of a fund's TNA). The commitment approach is mainly focused on market values of the underlying positions of derivatives. Under this method, all derivatives are transformed into the value of their underlying positions and, unless categorized as a hedging instrument or part of another non-speculative strategy (and netted out),⁷⁹ their sum is compared to a fund's TNA. **Appendix C** contains selected items from the list of examples for calculating the commitment values of various derivatives, which are provided in the CESR Guidelines (2010).

Since 2004, funds applying the commitment approach are only allowed to use long single-name CDS for "hedging" purposes as defined by CESR Guidelines (2010). If funds use complex derivatives like short single-name CDS or multi-name CDS, they are, in general, required to use the more advanced VaR approaches for risk measurement because complex correlations are not adequately accounted for under the commitment approach. Nevertheless, even if funds use complex derivatives to a negligible extent, they still have to adequately specify the commitment values for these derivatives under the commitment approach (CESR Guidelines (2010)).

As stated before, only the commitment values from the speculative use of derivatives are compared to a fund's TNA. For CDS bought on single-name underlying positions, the commitment values equal the market values of the underlying reference assets, whereas for the CDS sold on single-name underlying positions, the larger of either the market values of the underlying reference assets or the

⁷⁸ The regulation presented in the main text is based on the BaFin Explanation (2009) on the Derivative Order (2004)/BaFin-Erläuterung (2009) zu DerivateV (2004), which took effect on January 1, 2009 and was renewed in the middle of 2011 (BaFin Explanation (2011) on the Derivative Order (2011)/BaFin-Erläuterung (2011) zu DerivateV (2011)).

⁷⁹ Irrespective of whether two derivatives, or a derivative in combination with a non-derivative security, are considered, netting requires the underlying positions to be the same, e.g., exactly the same bonds of an issuer. By contrast, "hedging" as defined by the CESR Guidelines (2010), allows for different references. Both netting and hedging require that no additional gains are simultaneously generated and the risk of a fund is reduced and the market risks of derivatives are offset.

notional amounts of the CDS are used as the commitment values. The commitment values of long CDS will not be considered for comparison with a fund's TNA if a fund is offsetting another position (with an underlying having the same notional amount, coupon, and maturity) or buying protection on a bond already included in the fund's portfolio (for "hedging" purposes as defined by CESR Guidelines (2010)). By contrast, the commitment values of long and short CDS used for speculative purposes will be compared to the 100% TNA threshold.⁸⁰ For example, the threshold is relevant to a fund buying CDS protection on a bond without having the underlying bond in the portfolio (naked long CDS⁸¹), or to a fund buying a bond and CDS protection on that bond to realize arbitrage gains, e.g., via "negative basis trades"⁸² (according to CESR Guidelines (2010), arbitrage gains preclude the treatment as a "hedge"). However, in order to create leverage under this approach, CDS selling protection can only be used up to the point where its notional values reach 1% of a fund's TNA.

2.2.2.2 Derivative Use under the General Restriction of the VaR Approaches

Funds using more than a negligible amount of complex derivatives or complex structures (where the commitment approach cannot be applied) are required to use the VaR approach to measure the increase in potential market risk due to derivative use. The VaR calculation might rely on historical simulation, Monte-Carlo simulation, or variance-covariance analysis – additional backtesting procedures and stress tests should be carried out to check the accuracy and quality of the VaR model as well as predict extreme-event outcomes. Between 2004 and mid-2011, the VaR (determined at the 99% confidence level for a 10-business day holding period using parameters from the previous year) of a UCITS fund, including the different derivative constructs contained therein, was compared to the VaR of an appropriate, derivative-free, benchmark fund. The ratio of these two measures was not allowed to be larger than two (following the definitions provided by the regulation, this is called the "relative" VaR approach). As a consequence, funds using the relative VaR approach might have leverage higher than 100% of TNA because the approach is primarily restricting the increase in market risk under the assumption of normal market conditions. That is why funds using VaR have to further disclose the expected and potential leverage effect measured as the sum of the notional

⁸⁰ Buying CDS on an underlying position that is highly correlated with a bond in the portfolio could be an additional way to hedge against a value loss of the bond (that would be considered as a "hedge", if the conditions specified in the CESR Guidelines (2010) were met). In case CDS selling protection are used in combination with short-term (3 month) government securities to synthesize bond positions, their commitment values would not be added to be compared to the 100% TNA threshold under the commitment approach.

⁸¹ Between 2004 and mid-2011, the general short sale prohibition was also applicable on derivatives and guaranteed that, in the case of physically settled derivatives, the underlying positions were within the portfolio at contract initiation. E.g., buying protection via CDS for a physical settlement required holding the underlying of the CDS in the portfolio at contract initiation. See § 4 Derivative Order/DerivateV (2011).

⁸² See Oehmke and Zawadowski (2013) and "Get Positive Results With Negative Basis Trades", September 23, 2011, [<http://www.investopedia.com/articles/trading/08/negative-basis-trades.asp#axzz2Io8W8UVf>, visited on 15.12.2012].

amounts of derivatives (without netting positions) in their prospectuses and annual reports. For example, the potential leverage from sold CDS (and eventually also from bought CDS that are in a fund's portfolio, which are then treated as if generating leverage) would be accounted for by the sum of notional values which could be higher than a fund's TNA. Interestingly, this is not meant to impose an additional limit on leverage; however, funds are required to control for the leverage effect in the framework of their risk management systems based on self-developed leverage measures.⁸³

Since mid-2011, funds are able to calculate either an "absolute" VaR or a "relative" VaR; both determined at the 99% confidence level for a 20-business day holding period using parameters from the previous year. The new VaR measure is subject to an "absolute" limit of 20% of a fund's TNA. Starting July 1, 2011, rules in the Derivative Order/DerivateV (2011), §§ 28a to 28c, regulate the disclosure and declaration of certain information concerning derivative instruments. First, a fund's prospectus must disclose the method used for calculating the potential market risk generated by derivatives as well as the expected and potential leverage effect in a short and comprehensive manner. Since mid-2011, the annual report not only has to include the methods used for calculating the potential market risk, but also the risk model and the underlying model parameters. Additionally, investment companies have to transmit reports about the kinds and purposes of their derivatives to the BaFin on a regular basis (at least once a year). The purposes of derivative use could be either to hedge, gain risk exposure, or to implement selected investment strategies. Moreover, investment companies have to file declarations on derivatives and their commitment values at the end of the reporting period.

Furthermore, since mid-2011, the CESR Guidelines (2010) and the Derivative Order/DerivateV (2011) oblige EU/German funds to hold enough financial assets or/and liquid funds (including cash) to be able to meet all future obligations and payments from financial derivative instruments.⁸⁴ For cash settled derivatives, the fund has to hold sufficient liquid funds. For physically settled derivatives, the fund has to have either the underlying position or a sufficient amount of liquid funds to buy this position (if the underlying asset is highly liquid and can be purchased on the market at any time). However, it is unclear whether these rules will be more effective than their U.S. counterparts as

⁸³ Regarding information contained in this and the next two paragraphs, please refer to the CESR Guidelines (2010), p. 29-36 and the following BaFin Explanations on the respective Derivative Orders: BaFin-Erläuterung (2009) zu § 8 DerivateV (2004) and BaFin-Erläuterung (2011) zu den §§ 8-8a DerivateV (2011).

⁸⁴ As opposed to U.S. funds, which are generally allowed to engage in short selling as long as they comply with the coverage requirement for derivatives, German funds are prohibited to short sell. This new coverage requirement was implemented because the prohibition of short selling derivatives was abolished in mid-2011 (however, it contained many exceptions already before). See § 4 Derivative Order/DerivateV (2011). Additionally, in Germany/the EU, funds are prohibited to short sell sovereign bonds via CDS since July 2010. See "Klares Ja zum Leerverkäufe-Verbot", January 22, 2014, [<http://www.tagesschau.de/wirtschaft/leerverkaeufe136.html>], visited on 22.01.2014].

assets for coverage remain unspecified and funds can determine for themselves the method by which they set the coverage level for contracts with cash settlement (CESR Guidelines (2010)).

Under the current regulation, funds that apply the VaR approach are able to choose which value they use (relative VaR together with the associated benchmark fund or absolute VaR) and how to calculate the value – e.g., by relying on historical simulation, Monte-Carlo simulation, or variance-covariance analysis. In addition to this flexibility, they are able to develop the leverage measure for risk management. Given this high level of flexibility, the potential leverage measure, which currently reflects the sum of the notional values of all derivatives, could be redefined to make the disclosed potential leverage more informative for investors and comparable across funds. For instance, one could adjust the calculation of potential leverage to reflect the sum of the notional values of derivatives used for speculation only and require all funds to report it in a uniform manner. Overall, although the general restrictions differ in Germany compared to the U.S., German funds can theoretically increase their leverage via derivatives such as CDS selling protection beyond their TNA (if the VaR measures lie within the specified ranges) as well.

2.2.2.3 The Treatment of Derivatives under German/EU Issuer-Oriented Rules

Whenever funds use derivatives they also have to check compliance with the issuer/counterparty rules that limit a fund's exposure to the credit risks of these issuers. For purposes of the issuer-oriented rules, they need to consider derivatives at their commitment values (CESR Guidelines (2010)). Funds applying a VaR approach have to use the commitment approach or determine the highest potential loss as a result of default by the issuer (if the commitment value cannot be calculated or is more conservative).⁸⁵ According to the 5%/10%/40%-issuer rule, a fund can invest 5% of its assets in the securities and money market instruments of one particular issuer. Further, this 5% threshold can be shifted to 10% if it is specified in the contract terms and such exceptions do not exceed 40% of a fund's TNA. For example, if a fund holds a bond XYZ, which trades at par (equal to 4% of its TNA), and sells protection on the same bond XYZ via CDS (with a notional amount of 1% that equals the commitment value) for replication, it will be exposed to the corporate issuer XYZ for 5% of TNA. In this example, the commitment approach accounts for the exposure to the CDS reference issuer consistently when compared to the valuation of bonds under this limit.

German regulation generally requires funds to account for derivative counterparty exposure when a central counterparty is not involved in the transaction and if the mark to market valuation and the

⁸⁵ See the CESR Guidelines (2010), p. 38.

margin offset of the derivative are not performed daily. In order to account for counterparty exposure, funds have to comply with the 20%-cumulative issuer rule that restricts a fund's investments in securities, money market instruments, bank deposits, together with the offset amount for counterparty credit risk of one financial institution (intermediary). On an individual securities level, the market value of the securities and money market instruments of one financial institution cannot be higher than 5% (10%) and the nominal value of a bank deposits cannot be higher than 20% of a fund's TNA. Further, the regulator limits a fund's exposure to the credit risk of the counterparties of OTC derivatives (the offset amount for counterparty credit risk measured by a derivative replacement value) to 5% of a fund's TNA (or 10% in case of credit institutions).⁸⁶ Between 2004 and mid-2011, the derivative counterparty exposure (called offset amount for counterparty credit risk) was measured as the sum of the positive derivative replacement values plus a safety margin. Since mid-2011, the derivative counterparty exposure is measured as the sum of the positive derivative replacement values plus the collateral provided to the counterparty. In addition, since 2004, the derivative counterparty exposure of a fund can be netted against the claim of the counterparty of the fund and the collateral provided by the counterparty under specific conditions.⁸⁷

The highest level of issuer/counterparty exposure of 20% of TNA could be reached, for example, if a fund invests 10% of its TNA in asset-backed securities and bonds⁸⁸ of a bank ABC and simultaneously buys CDS from ABC for the protection of various references with a replacement value of 10% of TNA. Derivative replacement values could be approximated by market values (reflecting liquidation values at reporting date). Hence, the potential exposure to counterparties on a notional basis may, in fact, be multiple times higher than suggested by market values⁸⁹ and create a problem if economic conditions change quickly (as happened during the financial crisis of 2007-2009). However, global rules on centrally cleared and "uncleared" derivatives are expected to minimize fund counterparty exposure in the EU/Germany in the near future.

To summarize, all these issuer rules guarantee that funds place at most 5% to 10% of their TNA with one corporate issuer⁹⁰ and 20% with a single intermediary. In Germany, the general market

⁸⁶ See the CESR Guidelines (2010), p. 37-38.

⁸⁷ These conditions are further specified in § 22 of the Derivative Order (2004)/DerivateV (2004), § 22 of the Derivative Order (2011)/DerivateV (2011), and the CESR Guidelines (2010), p. 38. Alternatively, UCITS funds may disregard the counterparty risk on the condition that counterparties provide collateral, which is valued at market price (after considering appropriate discounts) and exceeds the exposure to risk at any given time. See the CESR Guidelines (2010), p. 37-38.

⁸⁸ Alternatively, the fund might create these securities by investing in Treasury securities and selling CDS protection on ABS or bonds of this institution with a notional value of 10% of its TNA that, if equal to the commitment value, would instead be considered under the 20%-cumulative issuer rule in Germany/the EU.

⁸⁹ See the SEC Concept Release on Derivatives (2011), p. 29, 53.

⁹⁰ Rules limiting fund investments in securities issued by the German government or EU member states slightly differ, e.g., according to § 206 (2) CIL/KAGB, 35% of a fund's TNA can be invested in debt securities issued by the EU member states.

risk/leverage restriction interacts with the issuer-oriented rules to a higher extent than observed in the U.S.

3 Similarities and Differences between Derivative and Leverage Regulation in the U.S. and Germany/the EU – An Overview and Some Recommendations

Both in the U.S. and Germany, funds have to comply with general leverage restrictions and issuer-oriented rules. The major differences between how U.S. and German funds account for derivatives under these rules are discussed below.

3.1 General Leverage Restrictions in the U.S. and Germany

Table 3 summarizes the general leverage restrictions in the U.S. and Germany. For more detailed information on the U.S. and German rules, please refer to sections **2.1.1** and **2.2.2**, respectively.

Table 3: General leverage restrictions in the U.S. and Germany

General leverage restrictions in the U.S.	General leverage restrictions in Germany
Bank borrowing is restricted by the 300% asset-coverage rule to 33% of a fund's net assets. However, temporary (< 60 days maturity) short-term loans of up to 5% of a fund's TNA are allowed.	Short-term loans (< 1 year maturity) of up to 10% of a fund's TNA are allowed for either investment purposes or to bridge a liquidity gap, but not as a part of a fund's long-term investment strategies.

General leverage restrictions in the U.S.

The level of potential obligations arising out of derivatives that generate third party obligations only is restricted to a fund's TNA by requiring sufficient coverage. This concerns e.g., futures and forwards, written options, short CDS (as opposed to purchased options or long CDS, which are not covered by this rule). This rule is also applicable to other securities-lending transactions e.g., short selling. In order to determine these potential obligations from long derivative positions, the SEC recommends using the purchase or exercise price of the contract (less the margin on deposit), and for short positions the market value of the security or the notional amount of the asset underlying a contract (e.g., a derivative). This is the traditional SEC viewpoint. Meanwhile, almost all of a fund's securities can be "earmarked" on a fund's books (alternatively, segregated with a custodian) and offsetting positions entered as coverage for this kind of "senior security transactions".

General leverage restrictions in Germany

Derivatives may, at most, double the potential market risk of a fund. Typically the "relative" or "absolute" VaR approach is used to measure the increase in potential market risk. Following the definitions provided by regulation between 2004 and mid-2011, under the "relative" VaR approach, the relation of the VaR of the fund's portfolio to a VaR of an appropriate, derivative-free, benchmark fund is allowed to be at most two. From mid-2011, in addition to the relative VaR, funds are able to calculate an "absolute" VaR (both at the 99% confidence level for a 20-business day (previously 10) holding period using parameters from the previous year). The new VaR measure is subject to an "absolute" limit of 20% of the value of the fund. If funds use simple derivatives or negligible amounts of complex derivatives (with loss potential below 1% of a fund's TNA), the commitment approach can be applied, which restricts commitment values of derivatives used only for speculation (based on the market values of the underlying positions of derivatives) to a fund's TNA. Additionally, since mid-2011, UCITS funds have to hold sufficient liquid funds for cash settled derivatives and the underlying position, or sufficient liquid funds, for physically settled derivatives (if the underlying asset is highly liquid and can be purchased on the market at any time).

As presented in **Table 3**, the concept of "senior security" transactions and various coverage rules serve as excessive leverage/risk guardians at mutual funds in the U.S. Direct leverage in the form of bank borrowing is restricted by the 300% asset-coverage rule to 33% of a fund's net assets, while temporary (60 days maturity) short-term loans of up to 5% of TNA can be taken out without complying with any coverage rules. In contrast to the U.S., German funds are allowed to take out short-term loans, with a maximum maturity of 1 year, up to 10% of TNA for either investment purposes or to bridge a liquidity gap, but not as a part of long-term investment strategies. Independent from the limits on direct leverage, U.S. and German funds face separate rules restricting derivative use.

The U.S. law restricts the level of potential obligations arising only from derivatives that generate third party obligations (e.g., futures and forwards, written options, short CDS)⁹¹ by requiring sufficient coverage to a fund's TNA. However, the SEC observes that funds commonly underestimate these obligations (the amount that needs to be covered), which might, in consequence, allow funds to further increase their derivative holdings. Additionally, the use of derivatives with a loss limited to the premium paid and an unlimited potential gain (e.g., purchased options, long CDS) is not restricted. Thus, the sum of the notional values of derivatives that either do or do not create third party obligations can be higher than a fund's TNA. In Germany, funds using derivatives face a cap on the potential market risk created by derivatives (as presented in **Table 3**), which must be quantified using the VaR approach.⁹² Using a 99% confidence level for the VaR approach, the sum of the notional values of derivatives (or in the worst case, indirect leverage), can be extended beyond 100% of a fund's TNA. In addition, since mid-2011, German funds have to comply with coverage rules that are, in principle, comparable to U.S. coverage requirements. However, it is unclear whether these rules are more effective than their U.S. counterparts as assets for coverage remain unspecified and funds can determine for themselves the method by which they set the coverage level for contracts with cash settlements (CESR Guidelines (2010)). As in the U.S, these rules will not necessary prevent funds from taking on additional risk by using derivatives with a loss limited to the premium paid and unlimited gain potential. Although general restrictions are structured differently in the U.S. and Germany, they similarly allow funds to keep derivative holdings with notional amounts higher than a fund's TNA, and to build indirect leverage up to the size of a fund's TNA (or even higher). Consequently, the flexibility provided by regulation with respect to derivative use and leverage makes it possible for funds to default solely due to derivative investments.

Most of the coverage and risk measurement rules in the U.S. and Europe take into account potential losses in portfolio investments under the assumption of normal market conditions. The U.S. segregation approach, for example, allows funds to quantify potential obligations in a less conservative manner than originally allowed as well as classify volatile securities, which are highly volatile by nature, as collateral for derivatives in a fund's portfolio.⁹³ This could be a problem under adverse market conditions where all securities are highly positively correlated. When it comes to handling individual derivative types, it could be helpful to have a list issued by the supervisory authority that describes, in detail, how much risk (in terms of money) needs to be covered (as it is

⁹¹ A fund's TNA is the outcome of subtracting direct leverage from the total investments position.

⁹² Alternatively, the commitment values of derivatives used for speculation only are restricted to a fund's TNA, but this threshold is of secondary importance as funds using this approach are, by definition, supposed to use mainly simple derivatives like long CDS written on single-name references and/or negligible amounts of complex derivatives.

⁹³ See the SEC Staff No-Action Letter to MLAM (1996).

done in CESR Guidelines (2010)) and by which type of securities and assets. Similarly, the new EU coverage requirements do not clearly state the amount that needs to be covered and by which “liquid funds”. Thus, it might be helpful to require funds to use relatively risk-free coverage that is high enough in value to account for all potential obligations, which is often not the case for market values of derivatives. Rather, notional amounts (e.g., sold CDS) or some figure in between (e.g., futures) should be used. Furthermore, the European VaR approach directly assumes normal market conditions for evaluating the risk of portfolio loss for a particular investment company, even when portfolios include many complex derivatives (calculated using a 99% confidence level for a 20-business day holding period – formerly 10-business day holding period – and parameters from the previous year). The financial crisis of 2007–2009 demonstrates that investors and regulators have to consider states of the world that are far from normal. Additionally, if the applied risk management methods average out the extreme outcomes and funds only communicate these averages to the public, some investors might perceive the respective investment vehicles as nearly risk free and remain unaware that their investments could potentially disappear during a crisis. In fact, one could argue that there is only a limited need for risk control under normal circumstances and therefore require funds to report the expected shortfall given the occurrence of an unexpected event (Hull (2012)).

Germany’s/the EU’s decision to implement risk control mechanisms (the VaR approach and stress testing procedures) used in the banking industry for the mutual fund industry (in 2001 in the EU and 2004 in Germany) was driven by the belief that the rules successfully regulate banks. However, there are some doubts about the effectiveness of these rules (and of the stress testing mechanism applied, e.g., Acharya and Steffen (2013)) as some European banks that performed well under recent stress tests later needed assistance from the European Community. Currently, German/EU funds are required to report all parameters and methods used to determine the minimum, mean, and maximum VaR values. However, this information will not necessarily enable regulators, auditors, or other interested parties to replicate the results. One recommendation would be to prepare a separate highest potential obligations statement that shows the highest potential obligations from short selling and other securities-lending transactions, futures, forwards, foreign exchange contracts, credit default swaps, interest rate swaps, and total return swaps subdivided into long and short positions. By reading the statement of operations, one would then be able to identify the impact of the different financial instruments on a fund’s TNA at a specific reporting date and, using the highest potential obligations statement, determine the highest potential obligations from individual portfolio positions. An additional table could distinguish between obligations that do not require coverage (because of hedging or other non-speculative investment strategies) and those that do (leverage/speculation). As funds have portfolio assets to cover all the potential obligations from

investments and leverage, coverage positions should be grouped in the second part (e.g., into positions held in segregated accounts kept with third parties, underlying securities preserved as collateral on funds' books, etc.). Since FASB disclosure rules introduced during 2009 (FASB ASC 815-10 (2009)) already require U.S. funds to conservatively value potential future obligations from derivatives by type (and list the amount of collateral provided) for disclosure purposes, one could arrange this information in an easily accessible table.⁹⁴ The proposed tables could help the public and the regulators to more precisely approximate the loss potential of a fund.

In order to prevent funds from significant losses during a crisis while also allowing funds to pursue (non-)speculative derivative strategies that benefit investors, regulators could restrict the leverage from speculative derivative strategies and bank borrowing to a reasonable level below 100% of a fund's assets, e.g., 50% in addition to (or instead of)⁹⁵ the existing rules. The extent to which the limits are utilized could be disclosed by funds in the prospectuses and periodic reports, while a highest potential obligations statement and a breakdown of coverage table (including the types of collateral) could be provided in periodic reports.⁹⁶ This information should be comparable across funds and accessible to the public and regulators.

3.2 The Treatment of Derivatives under Issuer-Oriented Rules in the U.S. and Germany

Table 4 summarizes the regulations concerning the treatment of derivatives under issuer-oriented rules in the U.S. and Germany that restrict a fund's investments in the securities of particular issuers. For more detailed information on the U.S. and German rules, please refer to sections **2.1.2** and **2.2.2.3**, respectively.

⁹⁴ The SEC Letter to the GCotICI (2010) shows that funds did not uniformly disclose derivatives information until 2010. Currently, the information on future potential obligations from individual derivatives (and collateral provided) is spread across the annual report – it can be found in the footnotes of the schedule of portfolio holdings or in the notes part under single derivative descriptions. For example, see the Vanguard bond fund reports issued from 2004-2010.

⁹⁵ An additional measure of notional values of derivatives used for non-speculative purposes could then be limited to e.g., a fund's net assets.

⁹⁶ Data availability is an additional issue in Germany: although funds have to disclose their annual and semi-annual reports in the „Online Bundesanzeiger“, most of them cannot be found on this website. Structuring the website like the website of the SEC (filings section) could benefit investors, researchers, and regulators alike. For example, searching for the UIL S.A. Jahresbericht (30.09.2007) for the Investmentfonds UniEuroKapital Corporates A or the DWS S.A. Halbjahresbericht (30.06.2007) for the Investmentfonds DWS Euro-Corp Bonds does not provide results.

Table 4: The treatment of derivatives under issuer-oriented rules in the U.S. and Germany

Issuer-related rules in the U.S.	Issuer-related rules in Germany
<p>Under the issuer-related rules in the U.S., derivatives are, in general, accounted for at market values to guarantee a fund's independence from a few issuers or counterparties.</p>	<p>Under the issuer-related rules in Germany, the exposure to the reference issuer of the derivative and to the counterparty has to be accounted for in order to protect a fund from issuer/counterparty credit risk. Commitment values, or the highest potential loss given the default of the issuer (if the commitment value cannot be determined or is more conservative), are used to value the exposure to the reference issuer of derivatives.</p>
<p>5%/75%-diversification requirement: A fund classified as diversified is not allowed to invest more than 5% of its TNA in securities of one particular issuer (and to keep more than 10% of the outstanding voting securities of this issuer) for 75% of its asset value. Under the diversification requirement, a fund's exposure to the reference issuer of derivatives (not necessary to the counterparty) has to be accounted for at market values.</p>	<p>5%/10%/40%-issuer rule: Under this rule, a UCITS fund is not allowed to invest more than 5% of its TNA in securities of one particular issuer. The contract terms may further specify that the 5% rule can be extended to 10% up to a maximum of 40% of a fund's TNA. The commitment value, or the highest potential loss given the default of an issuer, must be determined in order to quantify the exposure to the reference issuer.</p>
<p>Portfolio Concentration requirement: Concentration within an industry is assumed to take place whenever a fund invests more than 25% of its assets in an industry (with industry classifications determined by a fund). Under this requirement, funds must account for the exposure to the reference issuer of the derivative (not necessary to the counterparty). Funds are allowed to use market values or notional amounts to value derivatives. However, funds seem to calculate industry exposure to the reference issuers of derivatives most often using market values.</p>	<p>20%-cumulative issuer rule: This rule applies for financial institutions (intermediaries) that provide funds in Germany with securities, money market instruments, bank deposits and contracts creating counterparty exposure (including derivatives). On the individual securities level, investments in securities and money market instruments cannot be higher than 5% (10%) and bank deposits 20% of a fund's TNA. The derivative counterparty exposure, measured by derivative replacement values, may not exceed 5% of a fund's assets (or 10% for credit institutions).</p>

Issuer-related rules in the U.S.	Issuer-related rules in Germany
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5% Limit on Investing in Securities-Related

Issuers: Under specific conditions of 12d3-1 of the ICA, funds are allowed to invest 5% of their TNA in securities provided by securities-related issuers, e.g., brokers, dealers, underwriters, or investment advisers with derivatives considered at market values. Under the conditions specified in 12d3-1 of the ICA, derivatives are perceived as debt securities and can be accounted for using the market or notional value of derivatives (however, the SEC observes that funds often use notional amounts to perform these calculations).

The U.S. issuer limits focus on the current portfolio composition and on restricting a fund's exposure to the credit risk of various issuers. Hence, the treatment of derivatives, as indicated in **Table 4**, conceptually differs from the consideration of derivatives under general leverage restrictions ("senior securities" limitations). For purposes of the 5%/75%-diversification requirement, the same derivative valuation rules apply as for calculating a fund's TNA: The "market value" is applied for exchange-traded derivatives and the "fair value" for OTC derivatives. Additionally, under the portfolio concentration requirement, funds can choose to use the notional value of derivatives. Although the potential exposure attainable through derivatives consists of two parts (the reference issuer and counterparty risks), it remains unclear whether only the reference-issuer exposure or both the reference-issuer and counterparty exposures should be considered for the purposes of the diversification and portfolio concentration requirements (SEC Concept Release (2011)). In my view, regulators could rely on rules that capture the counterparty risk, such as the U.S. 5% limit on investing in securities-related issuers and global rules on mandatory central clearing.⁹⁷

Under the issuer- and industry-related rules in the U.S., it would be useful to further distinguish between derivatives used for hedging purposes and those used for non-hedging purposes, and to only limit those that are used for non-hedging purposes (depending on the economic exposure created), as required by German/the EU regulation. Under German/EU regulation, if CDS buying or selling protections are used to hedge for existing portfolio positions, they do not need to be considered under the issuer limits that restrict reference-issuer exposure (insured securities are also not considered under these limits). As discussed in sections **2.1.2.1** and **2.2.2.3**, synthesized bonds created by using CDS selling protection should be accounted for at the market values of the

⁹⁷ CCPs face much higher capital requirements than the fund counterparties previously involved in derivative transactions.

underlying positions of CDS (or for simplification notional amounts) in order to be valued consistently with regular bonds under issuer-oriented rules (and not the market (fair) values of CDS).⁹⁸ Overall, since funds can circumvent the goal of the diversification and portfolio concentration rules by simply selling CDS and accounting for them at the market (fair) values, a concerted rule to value derivatives under both requirements should be designed. This rule should restrict exposure to a few individual issuers by accounting for the way derivatives are used in combination with other portfolio securities.

In Germany, derivatives are valued using either the commitment approach or the maximum loss given default of the issuer in order to ensure compliance with the issuer rules. In addition, these rules consider the way derivatives are used in combination with other portfolio securities.⁹⁹ For instance, if CDS selling protection on single-name securities are used to synthesize bonds, the larger of either the market value of the underlying position or the notional amount of the CDS is considered under the 5%/10%/40%-issuer rule. Assuming that the underlying bonds trade at par (below par), the market value of the underlying position (CDS notional value) is larger and better suits the purposes of the issuer-oriented rules in comparison to the CDS market (fair) values applicable under U.S. issuer limits.

In the U.S., funds account for derivative counterparty exposure if derivatives are not exchange-traded or otherwise centrally cleared and can be perceived as securities issued by securities-related issuers (e.g., brokers, dealers, underwriters, and advisers). If this is the case, derivatives (as well as the other securities of this particular issuer) are considered at their market value and can reach up to 5% of a fund's net assets under the 5% limit on investing in securities-related issuers. In Germany, funds account for counterparty exposure by relying on derivative replacement values under the 20% cumulative-issuer rule for financial institutions. Under this rule, the counterparty exposure cannot exceed 5% of a fund's assets (10% for credit institutions) if there isn't a central counterparty involved in the transaction and if the mark to market valuation as well as the margin offset of the derivative are not performed daily.¹⁰⁰ In the U.S., the market (fair) values of the "uncleared" CDS buying protection¹⁰¹ (as well as other securities from the same issuer) are restricted to 5% of a fund's assets under the 5% limit on investing in securities-related issuers. In Germany, the replacement values of such CDS (approximately equal to market (fair) values) are restricted to 5% and might, together with other securities from the same issuer, reach up to 20% of a fund's assets, which is higher than the

⁹⁸ Alternatively, instead of using the market values of the underlying positions of derivatives, one could quantify the reference-issuer exposure on a notional value basis for simplicity reasons.

⁹⁹ Although the commitment values of derivatives used to synthesize securities are accounted for under German issuer-oriented rules, they would not be considered under the general leverage restriction based on the commitment approach.

¹⁰⁰ In the case of swaps, as for many other derivatives, counterparties of the contracts ask for posting collateral under the ISDA Master Agreement, CSA and the Dodd-Frank Act (2010) to support the credit exposure to the other counterparties. See the CFRS Derivatives and Leverage Report (2010), p. 37-38.

¹⁰¹ Irrespective of whether long CDS "insure" the fund against the default of a bond or are used for speculation, the fund expects getting the notional amount (minus collateral) in the case of a bond default from the counterparty.

amount allowed under U.S. regulation. Nevertheless, these rules prevent funds from suffering high losses due to counterparty failure. This is in line with Helwege and Zhangs' (2013) findings that banks following similar diversification regulations only faced a small amount of counterparty exposure, which did not typically cause contagion around the 2007-2009 financial crisis.

Regarding a fund's exposure to OTC derivatives, it is important to note that during the financial crisis of 2007-2009, claims against AIG rose dramatically within a short period of time. In consequence, AIG (in its role as a CDS counterparty) was unable to offset margins and pay its obligations from CDS contracts before the intervention of the U.S. government (Brice (2011)). Similarly, Lehman Brothers, one of the main fund counterparties, suddenly defaulted because of risky investments in asset-backed securities and was unable to perform under existing CDS contracts (Hull (2012)). These events are why the G-20 countries agreed to oblige all derivatives to be centrally cleared by 2013/2014 and on the margin requirements (initial and variation margin) of the CCPs that directly restrict the counterparty exposure of funds. After full implementation of central clearing, there will be limited need to restrict counterparty exposure, unless the margin requirements and the capital requirements of the CCPs prove to be too low to prevent them from defaulting. The benefits can also be undermined due to the fragmentation of clearing services (Duffie and Zhu (2011))). Mandatory clearing started in the U.S. in March 2013, while in the EU it is anticipated to begin in the second half of 2014 at the earliest after the entry-into-force of the technical standards prepared by the ESMA.¹⁰² Rules with regard to "uncleared" swaps were recently drafted, yet it remains unclear when (and in what final form) they will enter into force globally¹⁰³ and hence, whether they will fulfill their objective. The imperative question remains of whether or not rules implemented on a national level will be consistent enough, even after resolving all open issues, to avoid global regulatory arbitrage.

4 Conclusion

This study analyzes regulation with respect to leverage and derivative holdings of mutual funds in the U.S. and Germany/the EU by presenting the relevant rules and highlighting the main similarities and differences regarding the level of flexibility in both countries. In particular, the study discusses the application of existing regulation on CDS and the potential of mutual funds to use CDS for speculative

¹⁰² See "ESMA informs European Commission of its intention to ease certain frontloading requirements under EMIR", May 5, 2014, [<http://www.esma.europa.eu/news/ESMA-informs-European-Commission-its-intention-ease-certain-frontloading-requirements-under-EMI?t=579&o=page%2FOTC-derivatives-and-clearing-obligation>, visited on 01.07.2014].

¹⁰³ For the information contained in this paragraph, refer to the SEC Press Release (2012-251), "Timing tension – Europe clearing deadline set to slip", October 24, 2013, [<http://www.risk.net/risk-magazine/feature/2302306/timing-tension-europe-clearing-deadline-set-to-slip>, visited on 20.12.2013], "Final Margin Framework for Uncleared Derivatives Released by Basel Committee and IOSCO Board Excludes Nonfinancial End-users from Requirements to Post Margin", November 11, 2013, [<http://www.velaw.com/resources/FinalMarginFrameworkUnclearedDerivativesBaselCommitteeIOSCOBoard.aspx>, visited on 20.12.2013] and BCBS & IOSCO (2013).

purposes. The comparison reveals the following: First, funds in the U.S. and Germany face restrictions on short-term bank borrowing of up to 33.3% and 10% of a fund's net assets, respectively. Second, independent from the limits on direct leverage, rules, which are structured differently in both countries, allow funds to extend leverage beyond their net assets by using derivatives. To avoid potentially high losses, it is advisable that regulators restrict direct and indirect leverage to a reasonable level below a fund's net asset value. Third, various issuer-oriented rules in the U.S. and Germany/the EU account differently for reference issuer and counterparty exposures from derivatives, with U.S. funds receiving higher discretion to undervalue the exposure to reference issuers. In order to guarantee a fund's independence from a few individual issuers and enhance investor protection with regard to undesirable changes in the asset allocations and risk profiles of funds, the respective exposures to issuers should be adequately accounted for. Regarding counterparty exposure from derivatives, funds are strictly regulated. In addition, they are expected to comply with strict global rules on mandatory central clearing for the majority of derivatives, and on "uncleared" derivatives in the near future. However, all other highlighted issues remain, for which the study proposes solutions that could benefit investors and regulators alike.

Overall, the flexibility provided by regulation with respect to derivatives and leverage makes it theoretically possible for funds to default solely due to their derivative investments. Furthermore, funds in the U.S. face higher discretion to increase the risks of their asset allocations via derivatives without being detected compared to funds in Germany/the EU. These results are highly relevant for the public and regulators in both countries.

Appendix A

This appendix shows the amount of securities and assets originally required by U.S. regulation for the coverage of selected derivatives and short selling as well as how regulation changes over time (until 2010).

Source	Operations & suggested coverage
SEC Staff No-Action Letter to Dryfus (1987), p. 1-2	<p>"In Investment Company Act Rel. No. 7221 (June 9, 1972)('Release 7221'), the staff stated it would not object if a fund purchased or sold commodities or commodities contracts subject to certain restrictions, including 300-percent asset coverage of the contracts and other borrowings. (...) In Release 10666, the Commission discussed potential senior security and leveraging problems arising from certain own trading practices. The release sets forth means by which funds can eliminate these problems, and thereby avoid the restrictions on trading in commodities set forth in Release 7221, through the segregation of fund assets. (...) The staff has subsequently developed various segregation requirements for funds. To comply with these requirements, a fund with a long position in a futures or forward contract, or that sells a put option, must establish a segregated account (not with a futures commission merchant or broker) containing cash or certain liquid assets equal to the purchase price of the contract or the strike price of the put option (less any margin on deposit). (...) Segregation of assets is not required if a fund 'covers' a long position or the sale of a put option. For example, instead of segregating assets, a fund that has a long position in a futures or forward contract could purchase a put option on the same futures or forward contract with a strike price as high or higher than the price of the contract held by the fund. A fund that has sold a put option could sell short the instruments or currency underlying the put option at the same or higher price than the strike price of the put option. Similarly, the fund could purchase a put option, if the strike price of the purchased put option is the same or higher than the strike price of the put option sold by the fund."</p>
SEC Staff No-Action Letter to Dryfus (1987), p. 1-2	<p>"For short positions in futures or forward contracts, sales of call options, and short sales of securities, a fund may establish a segregated account (not with a futures commission merchant or broker) with cash or certain liquid assets that, when added to the amounts deposited with a futures commission merchant or a broker as margin, equal the market value of the instruments or currency underlying the futures or forward contracts, call options, and short sales (but are not less than the strike price of the call option or the market price at which the short position or short sales were established). (...) In addition, a fund that engages in short sales, short positions and sales of call options need not segregate fund assets if it "covers" these positions in the following ways. A fund selling a security short may own that security or hold a call option on that security with a strike price no higher than the price at which the security was sold. (...) A fund with a short position in a futures or forward contract may cover by owning the instruments or currency underlying the contract. A fund may also cover this position by holding a call option permitting the fund to purchase the same futures or forward contract at a price no higher than the price at which the short position was established."</p>

Source	Operations & suggested coverage
SEC Staff No-Action Letter to Dryfus (1987), p. 3	<p>"A fund selling a call option on a security or stock index may cover its position by holding the same security (or, in the case of a stock index, a portfolio of stocks substantially replicating the movement of the index) underlying the call option. A fund may also cover by holding a separate call option on the same security or stock index with a strike price no higher than the strike price of the call option sold by the fund. (...) A fund selling a call option on a futures or forward contract may cover by entering into a long position in the same contract at a price no higher than the strike price of the call option. Similarly, a fund may cover by owning the instruments or currency underlying the futures or forward contract. A fund could also cover this position by holding a separate call option permitting it to purchase the same futures or forward contract at a price no higher than the strike price of the call option sold by the fund."</p>
SEC Staff No-Action Letter to RSIT (1995), p. 3	<p>"We would not recommend that the Commission take enforcement action under Section 18(f) of the 1940 Act if a Fund that engages in short selling maintains in a segregated account on the books of its custodian an amount that, when combined with the amount of collateral deposited with the broker in connection with the short sale, equals the current market value of the security sold short."</p>
SEC Staff No-Action Letter to MLAM (1996), p. 5	<p>"Accordingly, we would not recommend that the Commission commence enforcement action under Section 18 of the Investment Company Act if a Fund covers its obligations that may otherwise be deemed to be senior securities by maintaining a segregated account on the books of its custodian, and includes in that segregated account cash or liquid securities (regardless of type) having an aggregate value, measured on a daily basis, at least equal to the amount of the covered obligations."</p>
SEC Staff Letter from Lawrence A. Friend (1997), p. 3	<p>"Typically, investment companies have designated securities to be segregated on the records of their custodians. The staff has been asked by registrants whether it would be consistent to segregate accounts on the fund's records. The staff has indicated that it would not object if assets segregated under Section 18 were designated solely on the fund's records and not designated on the fund's custodian's records."</p>
CFRS Derivatives and Leverage Report (2010), p. 14-15	<p>"In December 2005, the SEC staff informally embraced a flexible approach for covering cash-settled futures and forwards. As in the case of interest rate swaps, in connection with the review and comment on fund registration statements, the staff acquiesced to the segregation of the net amount due on the contract, rather than the larger amount required to be segregated under the Dreyfus Letter. (...) For cash-settled futures and forwards, the SEC staff indicated that a fund may segregate assets equal to the net amount owed under the contract, as determined daily, less any margin that must be posted with a futures commission merchant. For purposes of the SEC staff's position, a cash-settled contract is one in which no physical delivery is permitted on the settlement date; instead, the parties to the contract must settle with cash."</p>

Appendix B

This appendix gives an overview of legal changes in Germany between 2004 and mid-2011.

Content of legal revision	Important statutory orders and legal interpretations
2004 Investment Modernization Act "IMA" (Investmentmodernisierungsgesetz "InvMG")	
<ul style="list-style-type: none"> The Investment Act "IA" (Investmentgesetz "InvG") and Investment Tax Act "ITA" (Investmentsteuergesetz "InvStG") came into effect for all home and foreign mutual funds on January 1, 2004, while some parts of prior regulations were valid until February 13, 2007 Extension of investment opportunities and investment limits, especially the use of derivatives as a part of the investment strategy Hedge funds were first permitted 	<ul style="list-style-type: none"> Derivative Order/DerivateV (2004)
2007 Investment Amendment Act "IAA" (Investmentänderungsgesetz "InvÄndG")	
<ul style="list-style-type: none"> Effective December 28, 2007; some parts of prior regulation valid until July 1, 2010 Further extension of investment opportunities and removal of certain investment limits, in particular, legal introduction of infrastructure and other special investment funds, such as microfinance funds Discontinuation of double supervision by Bundesanstalt für Finanzdienstleistungsaufsicht ("BaFin") and Deutsche Bundesbank in favor of sole supervision by BaFin 	<ul style="list-style-type: none"> BaFin Explanation (2009) on Derivative Order (2004)/BaFin-Erläuterung (2009) zu DerivateV (2004)
2011 UCITS-IV-Implementation-Act "UCITS-IV-IA" (OGAW-IV-Umsetzungsgesetz "OGAW-IV-UmsG")	
<ul style="list-style-type: none"> Effective July 1, 2011, some parts of prior regulation valid until December 31, 2012 EU-wide harmonization of supervisory rules, simplification of cross-border notification procedures (complete EU-Passport) and mutual fund mergers (and enablement of asset poolings by introduction of master-feeder structures) 	<ul style="list-style-type: none"> Three statutory orders and three BaFin explanations replaced old interpretations: BaFin-Explanation (2011) on Derivative Order (2011)/BaFin-Erläuterung (2011) zu DerivateV (2011), The minimum requirements for risk management of investment companies (2010) / Die Mindestanforderungen an das Risikomanagement von Investmentgesellschaften (InvMaRisk (2010)) and BaFin explanation on InvMaRisk (2010), and Ordinance specifying rules of conduct and organizational requirements for investment services enterprises / Investment-, Verhaltens- und Organisationsverordnung ("InvVerOV") and BaFin explanation on InvVerOV (2011)

Appendix C

This appendix shows an excerpt from the CESR Guidelines (2010), p. 8-9 about the commitment values to account for derivative exposure of selected derivatives used under various rules by EU/German funds.

Derivatives	Commitment values
Interest Rate Future, Currency Future	Number of contracts * notional contract size
Equity (or Bond) Future	Number of contracts * notional contract size * market price of underlying equity share (or market price of the cheapest-to-deliver reference bond)
Index Futures	Number of contracts * notional contract size * index level
Plain Vanilla Bond Option	Notional contract value * market value of underlying reference bond * delta
Plain Vanilla Equity Option	Number of contracts * notional contract size * market value of underlying equity share * delta
Plain Vanilla Interest Rate Option	Notional contract value * delta
Plain Vanilla Currency Option	Notional contract value of currency leg(s) * delta
Plain Vanilla Index Options	Number of contracts * notional contract size * index level * delta
Plain Vanilla Options on Futures	Number of contracts * notional contract size * market value of underlying asset * delta
Plain Vanilla Swaptions	Reference swap commitment conversion amount (see below) * delta
Warrants and Rights	Number of shares/bonds * market value of underlying referenced instrument * delta
Plain Vanilla Fixed/Floating Rate Interest Rate and Inflation Swaps	Market value of underlying (the notional value of the fixed leg may also be applied)
Currency Swap, Cross currency Interest Rate Swaps	Notional value of currency leg(s)
Basic Total Return Swap	Underlying market value of reference asset(s)
Non-Basic Total Return Swap	Cumulative underlying market value of both legs of the TRS
Single Name Credit Default Swap	Protection Seller – The higher of the market value of the underlying reference asset or the notional value of the Credit Default Swap. Protection Buyer – Market value of the underlying reference asset
Contract for Differences	Number of shares/bonds * market value of underlying referenced instrument
Forward Rate Agreement (FX forward)	Notional value (notional value of currency leg(s))

Appendix D

This appendix shows the separate paragraphs of the Investment Act/Investmentgesetz (IA/InvG) limiting investments, in particular securities, between 2004 and mid-2011 and lists the new corresponding rules of the Capital Investment Law/Kapitalanlagegesetzbuch (CIL/KAGB), which took effect on July 22, 2013.

§ of the IA/InvG	§ of the CIL/KAGB
§ 47 IA/InvG	§ 193 CIL/KAGB
§ 48 IA/InvG	§ 194 CIL/KAGB
§ 49 IA/InvG	§ 195 CIL/KAGB
§ 50 IA/InvG	§ 196 CIL/KAGB
§ 51 IA/InvG	§ 197 CIL/KAGB
§ 52 IA/InvG	§ 198 CIL/KAGB
§ 53 IA/InvG	§ 199 CIL/KAGB
§ 54 IA/InvG	§ 200 CIL/KAGB
§ 57 IA/InvG	§ 203 CIL/KAGB
§ 59 IA/InvG	§ 205 CIL/KAGB
§ 60 IA/InvG	§ 206 CIL/KAGB
§ 61 IA/InvG	§ 207 CIL/KAGB
§ 62 IA/InvG	§ 208 CIL/KAGB
§ 63 IA/InvG	§ 209 CIL/KAGB
§ 64 IA/InvG	§ 210 CIL/KAGB
§ 65 IA/InvG	§ 211 CIL/KAGB

References

Acharya, V., and S. Steffen, 2013, Falling Short of Expectations? Stress-Testing the European Banking System, working paper.

Adam, T.R., and A. Guettler, 2014, Pitfalls and Perils of Financial Innovation: The Use of CDS by Corporate Bond Funds, working paper.

AIFMD DIRECTIVE 2011/61/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010, July 1, 2011, Official Journal of the European Union L 174/1-174/73.

BaFin Directive on Fund Categories/BaFin-Richtlinie zur Festlegung von Fondskategorien, Richtlinie zur Festlegung von Fondskategorien gemäß § 4 Abs. 2 Investmentgesetz, i. d. F. vom 14. Dezember 2004.

BaFin Directive on Fund Categories/BaFin-Richtlinie zur Festlegung von Fondskategorien, Richtlinie zur Festlegung von Fondskategorien gemäß § 4 Abs. 2 Investmentgesetz, i. d. F. vom 30. Juni 2011.

BaFin Explanation on Derivative Order (2004)/BaFin-Erläuterung zu DerivateV (2004), Erläuterungen zu der Verordnung über Risikomanagement und Risikomessung beim Einsatz von Derivaten in Sondervermögen nach dem Investmentgesetz (InvG), 2009.

BaFin Explanation on Derivative Order (2011)/BaFin-Erläuterung zu DerivateV (2011), Erläuterungen zu der Verordnung über Risikomanagement und Risikomessung beim Einsatz von Derivaten in Sondervermögen nach dem Investmentgesetz (InvG), 2011.

BaFin Explanation on InvMaRisk, Erläuterungen zu den InvMaRisk (Mindestanforderungen an das Risikomanagement von Investmentgesellschaften), 30. Juni 2010.

BaFin Explanation on InvVerOV, Begründung zur Verordnung zur Konkretisierung der Verhaltensregeln und Organisationsregeln nach dem Investmentgesetz (Investment-Verhaltens- und Organisationsverordnung – InvVerOV), 2011.

BaFin-Questions on Leverage/BaFin-Fragenkatalog zur Kreditaufnahme, BaFin-Fragenkatalog zur Kreditaufnahme: Fragenkatalog zu § 53 Investmentgesetz vom 1. Dezember 2009.

BaFin, The minimum requirements for risk management of investment companies (2010) / Die Mindestanforderungen an das Risikomanagement von Investmentgesellschaften (InvMaRisk (2010)): Rundschreiben 5/2010 zu den Mindestanforderungen an das Risikomanagement für Investmentgesellschaften, vom 30. Juni 2010.

Basel Committee on Banking Supervision and Board of the International Organization of Securities Commissions: Margin requirements for non-centrally cleared derivatives, September 23, 2013, [<http://www.bis.org/publ/bcbs261.pdf>, visited on 20.12.2013]

Beschlussempfehlung und Bericht des Finanzausschusses (7. Ausschuss), Deutscher Bundestag, Drucksache 16/6874 vom 25. Oktober 2007.

Brice, L., 2011, Dodd-Frank Act Regulation of Hedge Funds and Derivatives, Journal of Financial Transformation 33, 85-94.

Bolton, P., and M. Oehmke, 2011, Credit Default Swaps and the Empty Creditor Problem, Review of Financial Studies 24, 2617-2655.

Brown, K., W. Harlow, and L. Starks, 1996, Of Tournaments and Temptations: An Analysis of Managerial Incentives in the Mutual Fund Industry, Journal of Finance 51, 85-110.

BVI Bundesverband Investment und Asset Management e.V., Ed. (Jahresbericht 2004 - 2011): Investment, Daten, Fakten, Entwicklungen, various editions, Frankfurt am Main.

Capital Investment Law/Kapitalanlagegesetzbuch (CIL/KAGB [2013]) Kapitalanlagegesetzbuch vom 4. Juli 2013, BGBl. I, 1981.

CESR COMMITTEE OF EUROPEAN SECURITIES REGULATORS, CESR's Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS, CESR/10-788, July 28, 2010, [<http://www.esma.europa.eu/popup2.php?id=7000>, visited on 04.10.2011].

CFRS Derivatives and Leverage Report, 2010, Committee of Federal Regulation of Securities ABA Section of Business Law: Report of the Task Force on Investment Company Use of Derivatives and Leverage, July 6, 2010, [http://meetings.abanet.org/webupload/commupload/CL410061/sitesofinterest_files/DerivativesTF_July_6_2010_final.pdf, visited on 30.03.2011]

Chevalier, J., and Ellison, G., 1997, Risk Taking by Mutual Funds as a Response to Incentives, *Journal of Political Economy* 105, 1167-1200.

CFTC, Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, April 28, 2011, 17 CFR Part 23, RIN 3038--AC97, 76 Federal Register (FR) 23732.

CFTC, Business Conduct Standards for Swap Dealers and Major Swap Participants with Counterparties, February 17, 2012, 77 FR 9734.

CFTC, Confirmation, Portfolio Reconciliation, Portfolio Compression, and Swap Trading Relationship Documentation Requirements for Swap Dealers and Major Swap Participants; Final Rule, September 11, 2012, 77 FR 55904.

Council Directive 85/611/EEC of 20 December 1985 on the Coordination of Laws, Regulations and Administrative Provisions Relating to Undertakings for Collective Investment in Transferable Securities (UCITS), December 31, 1985, OJ L 375, 3-18.

Derivative Order/DerivateV (2004) BaFin: Verordnung über Risikomanagement und Risikomessung beim Einsatz von Derivaten in Sondervermögen nach dem Investmentgesetz (Derivateverordnung - DerivateV), i.d.F. vom 6. Februar 2004, Bundesgesetzblatt (BGBl.) I, 153-159.

Derivative Order/DerivateV, BaFin, Verordnung über Risikomanagement und Risikomessung beim Einsatz von Derivaten in Sondervermögen nach dem Investmentgesetz (Derivateverordnung (2004) - DerivateV (2004)), i.d.F. vom Juni 2011, BGBl. I, 1278-1287.

Dodd-Frank Wall Street Reform and Consumer Protection Act, July 21, 2010.

Duffie, D., 1999, Credit Swap Valuation, *Financial Analysts Journal* 55, 73-87.

Duffie, D., and H. Zhu, 2011, Does a Central Clearing Counterparty Reduce Counterparty Risk?, *Review of Asset Pricing Studies* 1, 74-95.

EMIR EUROPEAN MARKET INFRASTRUCTURE REGULATION No 648/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, July 27, 2012, OJ of the European Union L 201/1-201/59.

FASB (Financial Accounting Standards Board) ASC 815-10: Derivatives and Hedging ("Topic 815") (formerly known as Statement of Financial Accounting Standards No. 161) as amended by the FASB

Staff Position No. FAS 133-1 and FIN 45-4, "Disclosures about Credit Derivatives and Certain Guarantees: An Amendment of FASB Statement No. 133 and FASB Interpretation No. 45", 2009.

German Capital Investment Companies Act/Kapitalanlagegesetz (GCICA/KAGG [1957]) Gesetz über Kapitalanlagegesellschaften vom 16. April 1957, BGBl. I, 378-384.

German Capital Investment Companies Act/Kapitalanlagegesetz (GCICA/KAGG [1990]) Gesetz über Kapitalanlagegesellschaften geändert durch das Gesetz zur Verbesserung der Rahmenbedingungen der Finanzmärkte (Finanzmarktförderungsgesetz) vom 22. Februar 1990, BGBl. I, 266-282.

German Capital Investment Companies Act/Kapitalanlagegesetz (GCICA/KAGG [1998]) Gesetz über Kapitalanlagegesellschaften geändert durch das Gesetz zur weiteren Fortentwicklung des Finanzplatzes Deutschland (Drittes Finanzmarktförderungsgesetz) vom 27. März 1998, BGBl. I, 539-556.

Helwege, J., and G. Zhang, 2013, Financial Firm Bankruptcy and Contagion, working paper.

Hull, J.C., 2012, Options, Futures, And Other Derivatives, 8th Global Edition, Pearson/Prentice-Hall.

Investment Company Act of 1940 as amended through P.L. 112-90, January 3, 2012.

Investment Company Institute Independent Directors Council, Board Oversight of Derivatives, Task Force Report, July 2008,

[http://www.ici.org/pdf/ppr_08_derivatives.pdf, visited on 26.03.2012]

Investment Company Institute, 2013, Investment Company Fact Book: A Review of Trends and Activities in the U.S. Investment Company Industry, 53rd edition, [http://www.icifactbook.org/pdf/2013_factbook.pdf, visited on 28.03.2014]

Investment Act/Investmentgesetz (IA/InvG [2004]) Gesetz zur Modernisierung des Investmentwesens und der Besteuerung von Investmentvermögen (Investmentmodernisierungsgesetz), i.d.F. vom 15. Dezember 2003, BGBl. I, 2676-2724.

Investment Act/Investmentgesetz (IA/InvG [2007]) Investmentgesetz [2004] geändert durch das Gesetz zur Änderung des Investmentgesetzes und zur Anpassung anderer Vorschriften (Investmentänderungsgesetz), i.d.F. vom 21. Dezember 2007, BGBl. I, 3089-3130.

Investment Act/Investmentgesetz (IA/InvG [2011]) Investmentgesetz [2007] geändert durch das Gesetz zur Umsetzung der Richtlinie 2009/65/EG zur Koordinierung der Rechts- und Verwaltungsvorschriften betreffend bestimmte Organismen für gemeinsame Anlagen in Wertpapieren (OGAW-IV-Umsetzungsgesetz - OGAW-IV-UmsG), i.d.F. vom 22. Juni 2011, BGBl. I, 1126-1165.

Investment Advisers Act of 1940 Aug. 22, 1940, ch. 686, title II, Sec. 201, 54 Stat. 847; as amended through P.L. 112-90, approved January 3, 2012.

Kempf, A., and S. Ruenzi, 2008, Tournaments in Mutual-Fund Families, Review of Financial Studies 21, 1013-1036.

Kempf, A., S. Ruenzi and T. Thiele, 2009, Employment Risk, Compensation Incentives, and Managerial Risk Taking: Evidence from the Mutual Fund Industry, Journal of Financial Economics 92, 92-108.

McDonald, R.L., Fundamentals of Derivatives Markets, 2009, International Edition, Pearson/Prentice-Hall.

Oehmke, M. and A. Zawadowski, 2013, The Anatomy of the CDS Market, working paper.

Ordinance Specifying Rules of Conduct and Organizational Requirements for Investment Services Enterprises / Investment-, Verhaltens- und Organisationsverordnung ("InvVerOV"), i.d.F. vom 28. Juni 2011, BGBl. I, 1288-1298.

RICHTLINIE 2007/16/EG DER KOMMISSION zur Durchführung der Richtlinie 85/611/EWG des Rates zur Koordinierung der Rechts- und Verwaltungsvorschriften betreffend bestimmte Organismen für gemeinsame Anlagen in Wertpapieren (OGAW) im Hinblick auf die Erläuterung gewisser Definitionen, i.d.F. vom 19. März 2007, Amtsblatt der Europäischen Union L 79/11-79/19.

SEC, Concept Release on Derivatives: Use of Derivatives by Investment Companies under the Investment Company Act of 1940, Securities Act Release No. IC-29776; File No. S7-33-11, August 31, 2011, 76 FR 34920.

SEC & CFTC, Release 33-9338: Further Definition of "Swap," "Security-Based Swap," and "Security-Based Swap Agreement"; Mixed Swaps; Security-Based Swap Agreement Recordkeeping, Release No. 33-9338; 34-67453; File No. S7-16-11, 2012.

SEC, Form N-1A, Registration statement under the Securities Act of 1933,
[<http://www.sec.gov/about/forms/formn-1a.pdf>]

SEC, Form N-SAR, Semi-annual report for registered investment companies,
[<https://www.sec.gov/about/forms/formn-sar.pdf>]

SEC, Letter to the General Counsel of the Investment Company Institute: Derivatives-Related Disclosures by Investment Companies, July 30, 2010.

SEC, Press Release, 2012-251: Joint Press Statement of Leaders on Operating Principles and Areas of Exploration in the Regulation of the Cross-Border OTC Derivatives Market, December 4, 2012.

SEC, Roadmap: SEC STATEMENT OF GENERAL POLICY ON THE SEQUENCING OF THE COMPLIANCE DATES FOR FINAL RULES APPLICABLE TO SECURITY-BASED SWAPS ADOPTED PURSUANT TO THE SECURITIES EXCHANGE ACT OF 1934 AND THE DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT, 17 CFR Part 240, Release No. 34-67177; File No. S7-05-12, 2012.

SEC, Release 7221: Guidelines prepared by the Commission's Division of Corporate Regulation for use in preparation and filing of registration statements for both open- end and closed-end management investment companies on Form N-8B-1, Investment Company Act Release No. 7221, June 9, 1972, 37 FR 12790.

SEC, Release 10666: Rules and Regulations or Securities Trading Practices of Registered Investment Companies: General Statement of Policy, Investment Company Act Release No. 10666, April 18, 1979, 44 FR 25128.

SEC, Release 13725: Exemption for Acquisition by Registered Investment Companies of Securities Issued by Persons Engaged Directly or Indirectly in Securities Related Businesses, Investment Company Act Release No. 13725 (Jan. 17, 1984), 49 FR 2912, January 24, 1984.

SEC, Release 23064: Registration Form Used by Open-End Management Investment Companies, Investment Company Act Release No. 23064, March 13, 1998, 63 FR 13916.

SEC, Release 24083: Interpretive Matters Concerning Independent Directors of Investment Companies, Investment Company Act Release No. 24083 ("Companion Release"), October 14, 1999.

SEC, Release 24828: Investment Company Names, Investment Company Act Release No. 24828, January 17, 2001, 66 FR 8509.

SEC, Release 26299: Compliance Programs of Investment Companies and Investment Advisers, Investment Company Act Release No. 26299, December 17, 2003, 68 FR 74714.

SEC, Release 34-68071: Capital, Margin, and Segregation Requirements for Security-Based Swap Dealers and Major Security-Based Swap Participants and Capital Requirements for Broker Dealers, Release No. 34-68071; File No. S7-08-12, 17 CFR Part 240, RIN 3235-AL12, 2012.

SEC, Schwab Amicus Brief: Brief Amicus Curiae dated March 30, 2010, In re: Charles Schwab Corporation Securities Litigation, Master File No. C 08-01510 WHA, 2010, U.S. Dist. LEXIS 32113 (N. D. Cal.).

SEC Staff, Dear Chief Financial Officer Letter from Lawrence A. Friend, Chief Accountant, Division of Investment Management, November 7, 1997.

SEC Staff, Dryfus Strategic Investing and Dryfus Strategic Income, SEC Staff No-Action Letter, June 22, 1987.

SEC Staff, Merrill Lynch Asset Management, L.P., SEC Staff No-Action Letter, July 2, 1996.

SEC Staff, Robertson Stephens Investment Trust, SEC Staff No-Action Letter, August 24, 1995.

SEC Staff, Memorandum on Mutual Funds and Derivative Instruments, September 26, 1994.

SEC Staff, Report to the United States Securities and Exchange Commission: Implications of the Growth of Hedge Funds, September 2003.

Securities Act of 1933, May 27, 1933, ch. 38, title I, Sec. 1, 48 Stat. 74; as amended through P.L. 112-106, approved April 5, 2012.

Securities Exchange Act of 1934, June 6, 1934, ch. 404, title I, Sec. 1, 48 Stat. 881; as amended through P.L. 111-72, approved October 13, 2009.

Stulz, R.M., 2010, Credit Default Swaps and the Credit Crisis, Journal of Economic Perspectives 24, 73-92.

Taylor, J., 2003, Risk-taking Behavior in Mutual Fund Tournaments, Journal of Economic Behavior & Organization 50, 373-383.

UCITS Directive 2009/65/EC/OGAW-Richtlinie 2009/65/EG: Richtlinie zur Koordinierung der Rechts- und Verwaltungsvorschriften betreffend bestimmte Organismen für gemeinsame Anlagen in Wertpapieren (OGAW) (Neufassung), i.d.F. vom 13. Juli 2009, Amtsblatt der Europäischen Union L 302/32-302/96.

UCITS-IV-Implementation-Act/OGAW-IV-Umsetzungsgesetz, Entwurf eines Gesetzes zur Umsetzung der Richtlinie 2009/65/EG zur Koordinierung der Rechts- und Verwaltungsvorschriften betreffend bestimmte Organismen für gemeinsame Anlagen in Wertpapieren (OGAW-IV-Umsetzungsgesetz - OGAW-IV-UmsG), Gesetzentwurf Bundesregierung, Bundesrat Drucksache 850/10 vom 31. Dezember 2010.

Van Ofwegen, R., W.F.C. Verschoor, and R.C.J. Zwinkels, 2012, The Effect of Credit Derivatives on Financial Sector Stability, Applied Finance Letters 1, 22-29.

Vollbrecht, J., 2003, Investmentmodernisierungsgesetz: Herausforderungen bei der Umsetzung der OGAW-Richtlinien, Institute for Law and Finance an der Johann Wolfgang Goethe Universität Frankfurt, Working Paper Series No. 13.

“Dodd-Frank Act Rulemaking: Derivatives”

[<http://www.sec.gov/spotlight/dodd-frank/derivatives.shtml>, visited on 15.12.2012]

DWS S.A. Halbjahresbericht vom 30.06.2007 für den Investmentfonds DWS Euro-Corp Bonds

“Get Positive Results With Negative Basis Trades”, September 23, 2011,

[<http://www.investopedia.com/articles/trading/08/negative-basis-trades.asp#axzz2lo8W8UVf>, visited on 15.12.2012]

“ESMA informs European Commission of its intention to ease certain frontloading requirements under EMIR”, May 5, 2014,

[<http://www.esma.europa.eu/news/ESMA-informs-European-Commission-its-intention-ease-certain-frontloading-requirements-under-EMI?t=579&o=page%2FOTC-derivatives-and-clearing-obligation>, visited on 01.07.2014]

“Final Margin Framework for Uncleared Derivatives Released by Basel Committee and IOSCO Board Excludes Nonfinancial End-users from Requirements to Post Margin”, November 11, 2013,

[<http://www.velaw.com/resources/FinalMarginFrameworkUnclearedDerivativesBaselCommitteeIOSCOBoard.aspx>, visited on 20.12.2013]

“Klares Ja zum Leerverkäufe-Verbot”, January 22, 2014,

[<http://www.tagesschau.de/wirtschaft/leerverkaeufe136.html>, visited on 22.01.2014]

PIMCO fund family, 2013, PIMCO Funds Supplement to the Statement of Additional Information (“SAI”) dated July 31, 2013, as supplemented from time to time,

[http://pe.newriver.com/summary.asp?doctype=sai&cid=PIMCOLL&cusip=693390700&oldurl=%2FRegulatory%2FExternal%20Documents%2FPIMCO_Funds_SAI.pdf, visited on 02.09.2013].

“Recovering Oppenheimer Champion Fund Losses”

[<http://www.oppenheimerfundfraud.com/id3.html>, visited on 08.09.2012]

“The Pittsburgh Summit: Key Accomplishments”, September 25, 2009,

[<http://www.state.gov/e/eb/ecosum/pittsburgh2009/resources/165061.htm>, visited on 05.12.2012]

“Timing tension – Europe clearing deadline set to slip”, October 24, 2013,

[<http://www.risk.net/risk-magazine/feature/2302306/timing-tension-europe-clearing-deadline-set-to-slip>, visited on 20.12.2013]

UIL S.A. Jahresbericht vom 30.09.2007 für den Investmentfonds UniEuroKapital Corporates A

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